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ABSTRACT

The purpose of this monograph is to examine many popularly propounded beliefs concerning shorthand teaching methodology and to determine if such opinions appear to be substantiated by research. The monograph is divided into four parts. Part 1, exploring the influence of shorthand accuracy upon dictation achievement, and Part 2, considering divergent approaches in shorthand instruction, together comprise approximately half the document. Part 3, a shorter section, offers an analysis of selected variables on achievement in shorthand. Part 4, titled New Thinking in Shorthand Pedagogy, makes up the second half of the monograph, treating such subjects as implications of research, evaluation procedures, speed development, and reducing apprehension, among others. Tabular and graphic presentations of data illustrate the text. (AJ)

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METHODS OF SHORTHAND INSTRUCTION

A Research Analysis

by

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PREFACE

The past decade has seen a marked increase in shorthand research, research designed primarily to determine whether certain widely propounded teaching methodologies are pedagogically sound. Perhaps this has resulted from the fact that a higher percentage of students fail shorthand than any other subject in public secondary schools. On the other hand, such research activity may have been undertaken because teaching methodology in shorthand has been largely dictated by authors of shorthand learning materials who are guided by personal opinion rather than by classroom experience and controlled research.

Research reports indicate that after completing one year of shorthand instruction in high school, less than 20 percent of the students are capable of taking dictation at 60 words a minute. Even more appalling, the same reports show that after completing two years of shorthand instruction, less than 50 percent of the students are capable of taking dictation at 80 words a minute. Such statistics have caused many instructors to wonder whether serious questions should not be posed concerning currently promoted methods and materials for teaching shorthand. If one can assume that the students enrolled in the shorthand classes are of average intelligence, such shockingly low achievement must certainly be an indictment of the teaching procedures by which these students have been instructed.

The purpose of this monograph is to examine many popularly propounded beliefs concerning shorthand teaching pedagogy and to determine if such opinions appear to be substantiated by research. Some of the research upon which this monograph is based was completed with the Office of Education, U.S. Department of Health, Education, and Welfare, portions of which have been published in article form in the *Journal of Business Education*, *Business Education Forum*, *Delta Pi Epsilon Journal*, and *The Balance Sheet*.

J.M.P.

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PART ONE

Chapter 1

SHORTHAND THEORY: A CONTROVERSIAL ISSUE

Until 1935 most shorthand teachers encouraged their students to write shorthand outlines according to the rules of the system. In 1935 Leslie introduced an entirely new concept in building shorthand skill. He contended that insistence upon accurate outlines created a mental block to speed development and that the high degree of accuracy which teachers had formerly demanded of their students actually interfered with the building of shorthand skill.

In commenting on shorthand accuracy in relation to teaching methodology, Leslie later wrote:

> The most important single objective of shorthand learning for the prospective stenographer is the ability to construct rapidly a legible shorthand outline for any word in the English language. The stenographer and the shorthand reporter are not concerned with theoretical accuracy. They are interested in the rapid construction of legible outlines. Emphasis on theoretical correctness serves only to lessen the likelihood that the outline will be constructed with sufficient speed to be of any practical value; it seldom has any effect on legibility.
>
> The teacher should have the ability to construct outlines that are theoretically correct in accordance with the textbooks of the shorthand system. It is not important that the stenographer have this ability, and any attempt to force the stenographic learner to acquire the ability will hamper the learner's progress toward stenographic skill.[1]

Leslie's ideas were widely publicized and generally accepted by shorthand teachers throughout the country. In recent years, however, the validity of Leslie's statements has been questioned.

After analyzing research findings and thought as expressed in professional literature pertaining to shorthand and transcription, Frink states:

> There is a belief on the part of many teachers and business educators that greater emphasis should be given to teaching of theory, not only the brief forms, but also the application of the principles of writing; that is, the writing of shorthand according to the rules.[2]

---

[1]Louis A. Leslie, *Methods of Teaching Gregg Shorthand* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1953), p. 121.

[2]Inez Frink, "A Comprehensive Analysis and Synthesis of Research Pertaining to Shorthand and Transcription" (Doctoral dissertation, Indiana University, 1962), p. 149.

In discussing Leslie's philosophy regarding shorthand accuracy, Lamb comments:

> Leslie believes that rules are important only to teachers of shorthand, and that time spent in training stenographers should be devoted to the reading, writing, and transcription of shorthand. The thought here seems to be that if students have sufficient practice in applying the rules of word-building, they will automatically apply them in writing unfamiliar words, or at least they get something down that they will be able to read back. Many teachers would disagree with Leslie on this point.
>
> In the opinion of some teachers, the important area of word-building is left too much to chance and individual resourcefulness. We can be sure that even students who have automatized a wide vocabulary of words through extensive reading and writing of shorthand will encounter some unfamiliar words that must be written under pressure of time.[3]

Presenting his point of view concerning the construction of unfamiliar words, Leslie states:

> They [the students] seem to write "by eye" in the same fashion that many pianists play "by ear." The mental process may be something like that by which we sometimes test a doubtful construction in English. If we don't happen to know the grammatical rule governing the construction, we read the sentence aloud, and in that way can very often decide which is the correct construction — because it "sounds right."[4]

Lamb, however, is not in accord with this viewpoint and comments:

> These are statements to question. Pianists who play by ear are talented, but if they can play only by ear and cannot read notes, they are handicapped by their lack of musicianship. They can play only what they have heard a number of times, and in all likelihood they will not be entirely accurate in reproducing what they have heard. Furthermore, men and women who choose the grammatical construction that "sounds right" often choose the wrong construction, and unfortunately the choice "sounds wrong" to those who know the rules. Likewise, students cannot count on their ability to write unfamiliar material "by eye" so that it can be transcribed accurately.[5]

Liles also raises some of these same questions and seems to agree with Lamb when he says:

> If the theory of any shorthand system is scientifically determined, it certainly should be a more effective system from the standpoint

---

[3]Marion M. Lamb, *Your First Year of Teaching Shorthand and Transcription* (Cincinnati: South-Western Publishing Co., 1950), pp. 22, 29.

[4]Louis A. Leslie, *Gregg Shorthand, Teacher's Handbook* (New York: Gregg Publishing Co., 1936), p. 43 [as quoted by Marion M. Lamb, *ibid.*, p. 30].

[5]Lamb, *op. cit.*, p. 30.

of readability, speed, and ease of mastery than would be one concocted on the spur of the moment by a student.[1]

Lesser believes that weak students in shorthand are those who have not mastered the theory of the shorthand system.

> Generally, the "weak students" in shorthand have never adequately learned the theory of the shorthand system so that they can automatize their responses. It is unfortunate that too many of the students' shorthand notes reveal that their knowledge of the theory of shorthand is far short of what is should be.

In agreeing, Condon states:

> The more complete the understanding of theory, the greater facility the student will bring to dictation, to improving shorthand outlines, and transcribing shorthand notes. . . . Although memorization of rules is not suggested, there is some evidence to suggest that the study of the principles of shorthand theory should receive greater emphasis.[3]

While no shorthand authority advocates rote memorization or verbalization of rules, many teachers and researchers recommend that greater emphasis be given the development of accurately written shorthand vocabulary. Teachers who believe that there is a significant relationship between competency in shorthand accuracy and achievement in shorthand dictation utilize teaching methods such as vocabulary drills and word-list tests which are designed to build systematically a shorthand vocabulary that will be written according to the "rules" (principles or rationale) of the shorthand system. Teachers who have been convinced that emphasis on shorthand accuracy is of no value or is detrimental to students abstain from such an approach and are not concerned with the accuracy of the students' construction of shorthand outlines.

---

[1]Parker Liles, "Issues in Teaching Shorthand," *The Balance Sheet*, XLV (October, 1963), pp. 52-57.

[2]Irvin H. Lesser, "Helping Weak Students in Second Semester Shorthand," *Journal of Business Education*, XXXVIII (December, 1963), pp. 111-112.

[3]Arnold Condon, "Principles for the Development of Theory and the Building of Writing Skills in First-Year Shorthand," *Secretarial Education with a Future*, Nineteenth Yearbook of the American Business Education Yearbook of The Eastern Business Teachers Association and The National Business Teachers Association (Somerville, New Jersey: E.B.T.A. and N.B.T.A., 1962), pp. 134-136.

THE RELATIONSHIP BETWEEN COMPETENCY IN SHORTHAND ACCURACY AND ACHIEVEMENT IN SHORTHAND DICTATION

Since major differences of opinion exist as to whether the student's ability to write accurate shorthand outlines is significantly related to achievement in shorthand dictation, a definite need prevails for empirical evidence concerning the relationship between competency in shorthand accuracy and achievement in shorthand dictation. To provide such evidence, the following study was conducted.

Statement of the Problem

The primary purpose of this study was to determine the relationship between the student's ability to write accurate shorthand outlines and his achievement in shorthand dictation. To gain a better understanding of the relationship between certain other variables which might affect achievement in shorthand dictation, an analysis was made to determine:

1. The relationship between the ability of the student to write accurate shorthand outlines and his ability to transcribe the outlines.
2. The relationship between the ability of the student to transcribe shorthand outlines and his achievement in shorthand dictation.

Definition of Terms

Shorthand Theory. Knowledge of shorthand theory refers to the correct application of rules or principles for writing rather than the rote memorization of such rules. In this study theory knowledge represents a functional knowledge, in that measurement of shorthand vocabulary is based on a stratified sample of words used in contemporary business communications.

Shorthand Word-List Test. Each of the three shorthand word-list tests consisted of 200 words sampled from Silverthorn's "High-Frequency Business Vocabulary Word List."[1] Each list of 200 words was dictated to the students at the rate of one word every four seconds (15 words a minute). After each list of 200 words was dictated, the students transcribed the list.

Shorthand Accuracy Index. A student's shorthand accuracy index

[1]J. E. Silverthorn, "High-Frequency Business Vocabulary Word List," *Word Division Manual* (Cincinnati: South-Western Publishing Co., 1958), pp. 85-109.

represents the highest number of shorthand outlines which he was able to write correctly on any one of the three word-list tests.

Shorthand Transcription Index. A student's shorthand transcription index represents the highest number of shorthand outlines which he was able to transcribe correctly on any one of the three shorthand word-list tests.

Unfamiliar, Non-Previewed Dictation. Unfamiliar, non-previewed dictation refers to dictation material taken from copy with which the students were not familiar. No words contained in the copy were written for the students either before (preview) or after (postview) the dictation.

Shorthand Dictation Achievement. The highest speed at which a student was able to take a three-minute, unfamiliar, non-previewed dictation selection and transcribe it with no more than 3 percent shorthand transcription error represents his shorthand dictation achievement.

Shorthand Transcription Error. An error which is attributable to the incorrect transcription of a shorthand outline is a "shorthand transcription error."

Non-Shorthand Transcription Error. An error in spelling, punctuation, or grammar is a "non-shorthand transcription error."

Procedures for Collecting and Treating Data

This study was limited to 135 students enrolled in four levels of shorthand instruction at North Texas State University.

Three weekly word-list tests of 200 words each, sampled from Silverthorn's "High-Frequency Business Vocabulary Word List," were administered to each class. Silverthorn's "High-Frequency Business Vocabulary Word List" consists of 4,950 of the most frequently used words in business communications arranged according to frequency of occurrence. For each test, 40 words were selected at random from every 1,000 words in Silverthorn's list, yielding a total of 200 words.

Each test was prerecorded on tape in order to maintain a consistency of dictation for each class. After the test was administered, the students were asked to transcribe their outlines. Both the shorthand outlines and the transcript were evaluated and graded. The number of shorthand outlines the student wrote accurately constituted his shorthand accuracy score. The number of shorthand outlines the student transcribed correctly constituted his shorthand transcription score.

A series of four weekly unfamiliar, three-minute, non-previewed dictation tests was given to each class. The dictation material was

taken from *Progressive Dictation with Previews*[2] by Zoubek. The dictation was prerecorded on tape at rates ranging from 50 to 140 words a minute. Students were asked to transcribe the highest rate which they could transcribe with no more than 3 percent error. The highest speed at which a student could transcribe with 97 percent accuracy constituted his dictation rate.

The student's highest shorthand accuracy score, transcription score, and dictation rate were recorded. The Product-Moment Correlation Coefficient was used to determine the relationship between (a) shorthand accuracy and shorthand dictation, (b) shorthand accuracy and shorthand transcription, and (c) shorthand transcription and shorthand dictation.

After the correlation was obtained for the population scores, the hypothesis that the correlation would be zero was tested. If the correlation was determined to be significant at the 5 percent level, coefficients of determination were computed.

The shorthand dictation rates were categorized into dictation-rate levels. The means and standard deviations of the shorthand accuracy index and shorthand transcription index were calculated for each dictation-rate level. To learn whether at least two of these means had a significant difference between them, analysis of variance was computed and F-ratios were determined. If analysis of variance statistics revealed that a significant difference occurred between at least two means, t-tests were computed.

Relationship Between Accuracy and Dictation

The coefficient of correlation between shorthand accuracy and shorthand writing speed was .8326, which was significant at the .05 level. The subsequent coefficient of determination indicated that approximately 69 percent of the achievement in shorthand writing speed was directly associated with shorthand writing accuracy.

An F-ratio of 50.113, significant at the .001 level, was found, indicating that at least two of the shorthand accuracy means were significantly different. T-test statistics in Table I indicate where significant differences did exist between mean accuracy scores for nine dictation-rate levels.

---

[2]Charles E. Zoubek, *Progressive Dictation with Previews* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1956).

TABLE I

T-RATIOS OF SHORTHAND ACCURACY SCORES OF NINE SHORTHAND DICTATION-RATE LEVELS

Shorthand Dictation-Rate Level	Shorthand Dictation-Rate Level							
WAM	120	110	100	90	80	70	60	50
130	1.60	2.27*	3.18*	4.79*	3.87*	7.37*	8.82*	12.62*
120		.49	1.71	3.75*	2.73*	6.83*	8.60*	12.89*
110			1.94	4.84*	2.94*	8.32*	10.96*	15.55*
100				2.76*	1.64	6.54*	8.78*	13.57*
90					—.34	4.14*	6.10*	11.15*
80						3.66*	5.15*	9.58*
70							1.44*	6.51*
60								5.44*

*Significant at the .05 level.

Five students passed dictation tests at 130 words a minute; nine at 120; forty-five at 110; twenty-four at 100; eighteen at 90; seven at 80; nine at 70; eleven at 60; and seven at 50. It is noteworthy that even with the relatively small number of students at some dictation-rate levels, significant differences were still obtained.

As the shorthand dictation rate increased from 50 to 130 words a minute, the shorthand accuracy mean for each rate also increased, with the exception of the 90 words-a-minute rate, as shown in Figure 1.

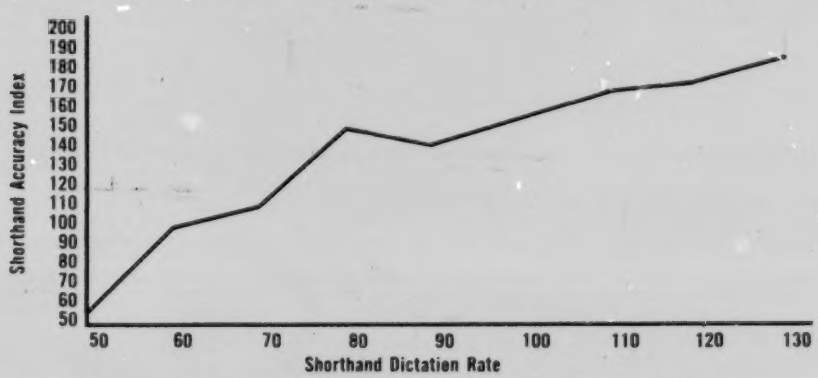

Fig. 1 — Mean Shorthand Accuracy Indexes of Nine Groups of Students Classified According to Shorthand Dictation Rate

The 130 wam dictation-rate level had a shorthand accuracy mean of 178; the 120 level, 163.2; the 110, 160.2; the 100, 152.1; the 90, 137.8; the 80, 140.4; the 70, 109.9; the 60, 99.2; and the 50, 55.6.

Relationship Between Shorthand Accuracy and Transcription

The value of the coefficient of correlation between shorthand accuracy and transcription was .9305, which was significant at the .05 level. The coefficient of determination indicated that approximately 87 percent of the student's ability to transcribe isolated shorthand outlines was directly associated with shorthand accuracy.

Relationship Between Shorthand Transcription and Dictation

The value of the coefficient of correlation between shorthand transcription and dictation was .8056, which was significant at the .05 level. The coefficient of determination indicated that approximately 65 percent of the achievement (speed) in shorthand dictation was directly associated with the student's ability to transcribe isolated shorthand outlines. It should be recalled that approximately 87 percent of the student's ability to transcribe shorthand outlines was directly associated with shorthand accuracy.

An F-ratio of 54.9461, significant at the .001 level, was found, indicating that at least two of the shorthand transcription means were significantly different. Whether there were significant differences between more than two of the mean transcription scores and which means had significant differences had to be determined from t-tests (Table II).

TABLE II

T-RATIOS OF SHORTHAND TRANSCRIPTION SCORES OF NINE SHORTHAND DICTATION-RATE LEVELS

Shorthand Dictation-Rate Level	Shorthand Dictation-Rate Level							
WAM	120	110	100	90	80	70	60	50
130	1.27	1.39	2.46*	3.27*	2.36*	5.55*	8.94*	12.83*
120		—.15	1.28	2.44*	1.34	5.05*	9.15*	13.50*
110			2.19*	3.76*	1.79	6.68*	12.39*	16.88*
100				1.59	.40	4.82*	9.92*	14.68*
90					—.72	3.40*	8.15*	13.47*
80						3.39*	7.11*	11.47*
70							3.85*	8.77*
60								5.57*

*Significant at the .05 level.

As the dictation rate increased from 50 to 130 words a minute, the transcription mean for each rate also increased, with the exception of the 90 and 120 words-a-minute rates, as shown in Figure 2.

The 130 dictation-rate level had a transcription mean of 191.6; the 120 level, 181.6; the 110, 182.3; the 100, 174.5; the 90, 167.4; the 80, 172; the 70, 147.8; the 60, 123.3; and the 50, 84.1.

Figure 3 illustrates the dual relationship between shorthand accuracy and transcription and dictation.

Fig. 2 — Mean Shorthand Transcription Indexes of Nine Groups of Students Classified According to Shorthand Dictation Rate

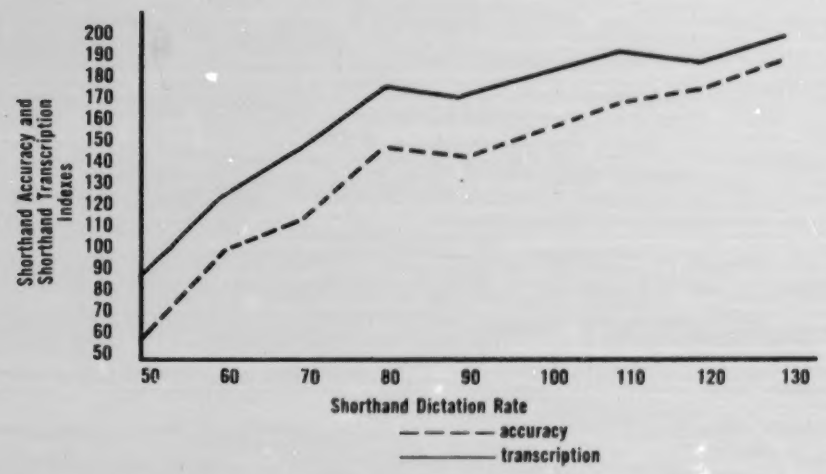

Fig. 3 — Mean Shorthand Accuracy Indexes and Mean Shorthand Transcription Indexes of Nine Groups of Students Classified According to Shorthand Dictation Rate

Conclusion

Since many of the teaching practices recommended by the authors of shorthand texts are based upon the assumption that students do not

benefit appreciably from high levels of knowledge of shorthand theory, recommended teaching methodology currently places little emphasis on shorthand theory. However, since a high relationship apparently does exist between the student's ability to write accurate shorthand outlines and his achievement in shorthand dictation, it would appear that prevalent practices in shorthand instruction relating to shorthand theory should be critically examined.

THE RELATIONSHIP BETWEEN THE ACCURACY OF SHORTHAND NOTES AND THE CORRECTNESS OF TRANSCRIPTS RESULTING FROM NONDEFERRED AND DEFERRED TRANSCRIPTION

While it has been established that there is a significant positive relationship between the shorthand student's ability to write accurately isolated shorthand outlines and his achievement in shorthand dictation, a need does exist to analyze the notes of shorthand students to determine if there is a relationship between the accuracy of shorthand notes recorded from connected-matter dictation and the correctness of the transcripts resulting from those notes.

Iannizzi conducted a study utilizing high school students in which she gave dictation tests at 40 words a minute to first-year shorthand students studying Diamond Jubilee Gregg Shorthand or Gregg Shorthand Simplified and at 70 words a minute to second-year shorthand students studying Diamond Jubilee Gregg Shorthand or Gregg Shorthand Simplified. The purpose of the Iannizzi study was to determine relationships of transcription errors to shorthand errors.

With the second-year students studying Diamond Jubilee Gregg Shorthand, the following data were obtained:[1]

Total outlines written	8,960
Outlines written correctly	7,854
Correct outlines transcribed correctly	7,673
Correct outlines transcribed incorrectly	181
Outlines written incorrectly	1,106
Incorrect outlines transcribed correctly	929
Incorrect outlines transcribed incorrectly	177

Based upon these data, one could make the following statements concerning the group studied:

1. Of the total outlines written, 88 percent were written correctly and 12 percent were incorrectly written.
2. The shorthand transcription error rate, which would not include errors in spelling, punctuation, and grammar, etc., was 4 percent.
3. Of the total shorthand transcription errors committed, 50 percent were from correctly written shorthand outlines and 50 percent were from incorrectly written outlines.
4. Of the total correctly written shorthand outlines, 2.3 percent were incorrectly transcribed.

[1]Elizabeth Iannizzi, "Transcription and Shorthand Errors Among Elementary and Advanced High School Writers of Simplified and Diamond Jubilee Gregg Shorthand" (Doctoral dissertation, New York University, 1967), p. 71.

5. Of the total incorrectly written shorthand outlines, 16 percent were incorrectly transcribed.
6. Fifty percent of the total shorthand transcription errors came from only 12 percent of the notes — the incorrectly written shorthand outlines.
7. An incorrectly written outline was 7 times as likely to be incorrectly transcribed as was a correctly written outline.

Statement of the Problem

This problem was an analysis of the relationship between the accuracy of shorthand notes written by collegiate-level shorthand students and the correctness of the transcripts resulting from nondeferred and deferred transcription.

Purposes of the Study

The purposes of this study were twofold: (1) to determine whether accurately written shorthand outlines were more accurately transcribed than inaccurately written outlines, and (2) to determine if the transcription of "cold notes" was influenced by the accuracy of shorthand outlines.

Procedures for Collecting and Treating Data

In order to make the desired analyses, the shorthand outlines from 49 students' shorthand transcripts of a five-minute dictation test at 80 words a minute were graded. The 49 students were enrolled in the first transcription course of advanced shorthand. Before entering the course, each student was capable of taking dictation for a five-minute duration with no more than 3 percent error at a minimum rate of 90 words a minute on new, unpreviewed material.

During the fifteenth week of the semester, the students were given a prerecorded five-minute dictation test at 80 words a minute. By the fifteenth week of the course, 80 words a minute was well within the control writing level of the class. The shorthand notes were transcribed twice by each student, immediately after receiving the dictation and again one week later. The students' shorthand notes and nondeferred and deferred transcriptions were graded, and comparisons were then made concerning the influence of shorthand accuracy upon students' achievement in nondeferred and deferred transcription.[2]

Table III presents a description of the shorthand dictation material used in the study.

---

[2]Nondeferred transcription refers to a transcription of shorthand notes which occurs on the same date of the dictation. Deferred transcription, sometimes termed "cold notes," refers to a transcription of shorthand notes which does not occur until a date later than that of the dictation.

TABLE III

COMPOSITION OF THE FIVE-MINUTE, EIGHTY-WORDS-A-MINUTE DICTATION MATERIAL

Minute	Words	Syllables	Syllabic Intensity	Brief Forms*	Percent Brief Forms	Common Words**	Percent Common Words
1	84	112	1.33	40	47.62	78	92.86
2	72	110	1.53	28	38.89	68	94.44
3	81	111	1.37	35	43.21	75	92.59
4	79	111	1.41	33	41.77	74	93.67
5	84	114	1.36	36	42.86	81	96.43
Total	400	558	1.4***	172	43***	376	94***

*Brief Forms and Brief Form Derivatives
**Occurring within the First 1,500 Most Frequently Used Words from Silverthorn's "High-Frequency Business Vocabulary"
***Weighted Average or Weighted Percent

The average syllabic intensity of the material was 1.4. Forty-three percent of the words were brief forms, and 94 percent of the words occurred within the first 1,500 most frequently used words as measured by Silverthorn's *High-Frequency Business Vocabulary*. Although not indicated by the table, it is noteworthy that 50 percent of the words in the five-minute dictation came from the first 100 most frequently used words in Silverthorn's list. The dictation material should not have posed undue difficulty for the shorthand students.

Presentation and Analysis of Data

After grading the shorthand outlines and transcripts of the 49 students, the following data were obtained concerning the shorthand notes and the nondeferred transcription from those notes:

Total outlines written	19,600
Outlines written correctly	18,728
Correct outlines transcribed correctly	18,649
Correct outlines transcribed incorrectly	79
Outlines written incorrectly	872
Incorrect outlines transcribed correctly	706
Incorrect outlines transcribed incorrectly	166

In drawing parallel conclusions between achievement of second-year high school students taking dictation at 70 words a minute and collegiate-level shorthand students taking dictation at 80 words a minute, one can make the following statements concerning the college-level students on nondeferred transcription:

1. Of the total outlines written, 95.55 percent were correctly written and 4.45 percent were incorrectly written.
2. The shorthand transcription error rate (which excludes errors in spelling, punctuation, and grammar) was 1.25 percent.

3. Of the total shorthand transcription errors committed, 32 percent were from correctly written shorthand outlines and 68 percent were from incorrectly written outlines.
4. Of the total correctly written shorthand outlines, 0.42 percent were incorrectly transcribed.
5. Of the total incorrectly written shorthand outlines, 19.11 percent were incorrectly transcribed.
6. Sixty-eight percent of the total shorthand transcription errors came from only 4.45 percent of the notes — the incorrectly written shorthand outlines.
7. An incorrectly written outline was more than 40 times as likely to be incorrectly transcribed as was a correctly written outline.

Table IV presents a profile of the students' shorthand dictation notes and the nondeferred transcription from those notes.

TABLE IV

AVERAGE NUMBER* OF CORRECTLY AND INCORRECTLY WRITTEN SHORTHAND OUTLINES AND THE ACCURACY OF THE RESULTING TRANSCRIPTS FROM NONDEFERRED TRANSCRIPTION

Minute	Words	Outlines Correctly Written			Outlines Incorrectly Written		
		Number	Correctly Transcribed	Incorrectly Transcribed	Number	Correctly Transcribed	Incorrectly Transcribed
1	84	80.6	80.15	.45	3.4	2.9	.5
2	72	69.0	68.85	.15	3.0	2.4	.6
3	81	77.9	77.55	.35	3.1	2.4	.7
4	79	73.8	73.45	.35	5.2	4.3	.9
5	84	80.9	80.60	.30	3.1	2.4	.7
Total	400	382.2	380.60	1.60	17.8	14.4	3.4

*Mean Average

Each student transcribed his shorthand notes again one week after the date of the original dictation. The transcription of these "cold notes" was then analyzed in terms of errors committed from correctly and incorrectly written shorthand outlines.

The distribution of errors on the deferred transcription was as follows:

Total outlines written	19,600
Outlines written correctly	18,728
Correct outlines transcribed correctly	18,635
Correct outlines transcribed incorrectly	93
Outlines written incorrectly	872
Incorrect outlines transcribed correctly	583
Incorrect outlines transcribed incorrectly	289

Based upon the students' achievement on deferred transcription, the following statements can be made:

1. The percent of incorrectly written shorthand outlines that were also transcribed incorrectly increased from 19 percent on nondeferred transcription to 33 percent on deferred transcription.
2. The percent of correctly written shorthand outlines that were transcribed incorrectly increased from 0.42 percent on nondeferred transcription to 0.50 percent on deferred transcription.
3. When the transcription of dictated material was deferred by one week, an incorrectly written outline was more than 60 times as likely to be incorrectly transcribed as was a correctly written outline.

Table V presents a profile of the students' shorthand dictation notes and the deferred transcription from those notes.

TABLE V

AVERAGE NUMBER* OF CORRECTLY AND INCORRECTLY WRITTEN SHORTHAND OUTLINES AND THE ACCURACY OF THE RESULTING TRANSCRIPTS FROM DEFERRED TRANSCRIPTION

Minute	Words	Outlines Correctly Written			Outlines Incorrectly Written		
		Number	Correctly Transcribed	Incorrectly Transcribed	Number	Correctly Transcribed	Incorrectly Transcribed
1	84	80.6	80.15	.45	3.4	2.6	.8
2	72	69.0	68.75	.25	3.0	2.1	.9
3	81	77.9	77.45	.45	3.1	1.8	1.3
4	79	73.8	73.45	.35	5.2	3 3	1.9
5	84	80.9	80.50	.40	3.1	2.1	1.0
Total	400	382.2	380.30	1.9	17.8	11.9	5.9

*Mean Average

Chi square was computed to test the hypothesis that accuracy of the shorthand transcript and accuracy of the shorthand notes were independent of each other. The value of chi square was significant at the .001 level, indicating that the accuracy of the transcript was dependent upon the accuracy of the shorthand outlines.

A coefficient of correlation of .72 was found between the accuracy of the students' shorthand outlines and the correctness of the transcripts with nondeferred transcription. When the transcription was deferred by one week, the coefficient of correlation between the accuracy of the students' shorthand outlines and the correctness of the transcripts increased to .81.[3]

When comparing errors between the deferred and nondeferred

[3]In the four groups of high school students which Iannizzi studied, coefficients of correlation of .64, .57, .65 and .82 were obtained between the accuracy of the students' shorthand outlines and the correctness of the transcripts on nondeferred transcription." *Ibid.*, p. 82.

transcripts, it can be observed that from the 18,728 correctly written outlines, an increase of 14 errors was committed after the notes had become "cold." From the 872 incorrectly written outlines, an increase of 123 errors was committed after the notes had become "cold."

Conclusion

The student's ability to write accurate shorthand outlines greatly enhances the likelihood of his correctly transcribing his shorthand notes, regardless of whether the notes are transcribed immediately after the dictation or after they have become "cold."

PART TWO

Chapter IV

CONTRASTING BELIEFS RELATED TO SHORTHAND TEACHING METHODOLOGY

The beliefs shorthand teachers hold regarding the degree of shorthand competency desirable for students to possess dictate to a large extent the teaching methodology which will be used in the classroom. Many shorthand teachers are expressing beliefs that greater teaching emphasis should be placed on shorthand theory. They are consequently suggesting teaching procedures which would place more emphasis on the student's ability to write theoretically correct shorthand outlines.

The teaching procedures recommended by the authors of the Gregg shorthand textbooks do not place emphasis, either directly or indirectly, on the students' writing of theoretically accurate shorthand outlines. This chapter is devoted to a discussion of recommended teaching methodology in which authorities in the area of shorthand and transcription are in disagreement with the teaching procedures recommended by Leslie and Zoubek, coauthors of the Gregg shorthand texts.

Shorthand Theory

The degree of competency desirable for the shorthand student to possess with regard to his knowledge of shorthand theory is being questioned. Liles states:

> Some teachers feel that it makes little difference whether the student is highly proficient in knowledge of shorthand theory or not. It has even been said that any shorthand outline which can be transcribed correctly is a correct outline.[1]

Leslie says: "A correct shorthand outline is one that is correctly transcribed."[2]

Liles continues:

> The implications of such a statement are dangerous, No one can deny that the transcript might be mailable, but many teachers infer from the statement that it is not necessary to require students to master the shorthand system taught.[3]

In commenting on this topic, Leslie writes: "It is not necessary for the stenographer to know every brief form or every abbreviating

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[1]Parker Liles, "Issues in Teaching Shorthand," *The Balance Sheet*, XLV (October, 1963), p. 52.

[2]Louis A. Leslie, *Methods of Teaching Gregg Shorthand* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1953), p. 209.

[3]Liles, *op. cit.*, p. 52.

device. . . . If the learner writes correctly 70 percent to 90 percent of the brief form occurrences in connected matter from dictation, that should be a satisfactory record."[4]

Leslie further states:

> The stenographer has no vocational need for the highest levels of shorthand penmanship and accurate shorthand theory. The stenographer needs perhaps an 80 percent knowledge of the brief forms, perhaps a 60 percent knowledge of the other abbreviating devices of the shorthand system, and no measurable percentage of accuracy or consistency in the application of the niceties or intricacies of shorthand outline construction.[5]

Liles feels that "when the student is imbued with this philosophy, he will have little incentive to study shorthand. The result is that his knowledge of theory will gradually deteriorate and he will eventually be writing a system of his own. Therefore, if the student has no definite, clear-cut knowledge of theory, he is constantly thinking and deciding how each outline should be written while taking dictation."[6]

Theory Tests

According to Liles, "The same protagonists of the principle that knowledge of theory is unessential hold that theory [word-list] tests are not only a waste of time but are definitely harmful."[7]

Leslie and Zoubek state:

> If there is to be a test, it should be a test that will not harm the learner. A word-list test that requires the learner to construct outlines for isolated words is definitely detrimental to the progress of the beginner.[8]

Disagreement is expressed by Liles:

> If knowledge of shorthand is unessential, then there is no need for testing knowledge. On the other hand, if knowledge is essential, the only way of determining what degree of knowledge has been achieved is by testing. . . . It should be remembered that correct shorthand will probably contribute more than any other one thing to the ultimate objective — the mailable transcript.
>
> Theory testing serves many purposes. It apprises the teacher as well as the student of the student's mastery of theory and forms the basis for counting knowledge of theory as one factor in evaluation. Theory tests motivate study on the part of the student and give an

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[4]Leslie, *op. cit.*, pp. 3, 12.
[5]*Ibid.*, p. 81.
[6]Liles, *op. cit.*, p. 52.
[7]*Loc. cit.*
[8]Louis A. Leslie and Charles E. Zoubek, *Teacher's Handbook for Gregg Shorthand Manual Simplified* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1955), p. 65.

added incentive to concentration in doing homework. If the student knows he will be tested, he will put forth the necessary effort to learn the theory; otherwise, he is not likely to do so. The student reacts in accordance with the way in which he is rewarded."

Anderson asks:

> Are word lists as detrimental as some authorities claim? In one study it was reported that the person who wrote the most accurate shorthand also had the most accurate transcripts.[10]

Writing of Shorthand

Differences of opinion exist with respect to when the writing of shorthand should begin. In the teacher's manual for Gregg Shorthand, Leslie and Zoubek state: "The learners read for the first eighteen assignments. Writing begins when Assignment 19 is presented."[11]

Some authorities have suggested that better results might be secured by introducing writing earlier rather than postponing it for the first four weeks.[12]

Condon says:

> Psychologically speaking, it is apparent that the writing approach has several key advantages. Students enter the shorthand class expecting to write shorthand, so why not capitalize upon this desire and let them write.[13]

Perry also advocates earlier writing by the shorthand students:

> For many years some shorthand authorities have suggested that teachers of elementary shorthand teach the subject by using the reading approach; that is, have the students read **only** for a number of lessons, both in class and as homework assignments, before attempting to write shorthand. . . . After teaching shorthand using the reading approach, I found that the technique left a great deal to be desired. Not only was I dissatisfied with the way the shorthand was being presented, but I was not satisfied with the progress my students were making in their attempt to read and write shorthand.[14]

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[9]Liles, *op. cit.*, p. 52.

[10]Ruth I. Anderson, "Shorthand and Transcription," *Research by the Classroom Business Teacher*, Eighteenth Yearbook of the Eastern Business Teachers Association and National Business Teachers Association (Somerville, New Jersey: E.B.T.A. and N.B.T.A., 1961), p. 129.

[11]Leslie and Zoubek, *op. cit.*, *Teacher's Handbook*, p. 25.

[12]Although Leslie and Zoubek do not recommend the introduction of writing prior to Lesson 19, they do suggest that teachers who feel earlier writing is beneficial might introduce writing as early as Lesson 6.

[13]Arnold Condon, "How Can Shorthand Be Introduced Most Effectively?" *Business Education Forum*, XIX (October, 1964), p. 10.

[14]Devern Perry, "Shorthand Success Through Writing," *The Balance Sheet*, XLVI (September, 1964), p. 17.

Student Use of the Shorthand Textbook While Writing Dictation

There is also some question as to the desirability of permitting students to keep their shorthand texts open during all dictation for the entire first semester and with the postponing of any new matter dictation until the completion of the theory course.

Zoubek writes:

> Are you asking your students to take dictation with their books closed? If so, you are making things difficult for them. They will progress faster with less effort if you permit them to keep their books open during all dictation in the theory course [first semester]. In fact, you should insist that they keep their books open.[15]

Hosler comments on such a practice when he says:

> The various teacher's manuals for the [Gregg] shorthand textbooks suggest a very desirable procedure; namely, that students be permitted to leave their textbooks open as the letters or other connected material are dictated, enabling them to refer to the textbook for help on individual outlines. While this procedure is a very desirable one, there is great danger that it will be used incorrectly. I have observed a great number of classes in beginning shorthand where the teacher has followed this procedure, but where students, instead of referring to the textbook when they need help, actually copy outline for outline and do not really take the material from dictation. In some cases like this the students are merely 'copying pictures' rather than mentally forming shorthand outlines from dictated sounds.[16]

Zoubek says:

> Even if the students seem to be copying from the book without any attention to the dictation, they are growing and that growth will be reflected in their eventual ability to take new-matter dictation when it is introduced at the end of the theory course [first semester].[17]

Condon, however, appears to be in agreement with Hosler:

> When taking dictation, there is an inherent danger in having the lesson material so readily available. Students must be restrained from freely referring to the shorthand plate when taking dictation. If students are allowed to copy the material from the text as it is dictated, they will become dependent upon the visual stimulus and unable to train their minds to supply the necessary visual image [from dictation alone].[18]

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[15]Charles E. Zoubek, "Still Time for Salvage," *Business Teacher*, XXXVIII (September October, 1960), p. 21.

[16]Russell J. Hosler, "How Can Facility with the Shorthand System Be Developed Best," *Business Education Forum*, XIX (October, 1964), p. 13.

[17]Zoubek, *op. cit.*, p. 21.

[18]Condon, *op. cit.*, "Principles for the Development of Theory and the Building of Writing Skills in First-Year Shorthand," p. 144.

Introduction of New-Matter Material

"The authors [of Gregg Shorthand] recommend that no new-matter dictation be attempted until the beginning of the second semester."[19] "The author's [Leslie] experience has convinced him that new-matter dictation should not be given until the completion of theory."[20]

In disagreeing, Condon states:

> If no graded new-matter dictation is given up to the time theory is completed, the student is sure to experience difficulty when he first attempts to take new ungraded dictation. This difficulty may be minimized by introducing graded new-matter dictation relatively early in the course.[21]

Anderson poses these questions:

> Do you get better results by deferring new-matter dictation? Could it be introduced earlier, thereby shortening the entire learning process? Will not serious consideration have to be given to this possibility if we are to develop a usable skill in the one-year shorthand program? Remember, there are many, many high schools now offering only one year.[22]

Direct Teacher Supervision of Students

Leslie states:

> When you dictate, dictate as inconspicuously as possible. Let the learners understand you are not watching them. If the teacher 'wanders steadily' up and down the aisles, he spreads alarm and nervousness along his path. . . . As the teacher goes up and down the aisles, the nervous learners react to his vigilance by increased nervousness and tension, which manifests itself in pen-pinching.[23]

Disagreement with this procedure has also been raised. If the shorthand teacher possesses the rapport in the classroom which a teacher should possess, it is doubtful that occasional direct supervision by the teacher would render the students emotionally unstable. It is possible that such a practice might reveal information which might be of assistance to the learners.

Shorthand Homework

Writing Practice. With respect to the writing of shorthand for homework, Leslie has said: "The writer strongly urges the teacher to have the learner copy only once the graded connected material for each lesson."[24]

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[19]Leslie and Zoubek, *op. cit.*, *Teacher's Handbook*, p. 35.

[20]Leslie, *op. cit.*, *Methods of Teaching*, p. 69.

[21]Condon, *op. cit.*, "Principles for the Development of Theory and the Building of Writing Skills in First-Year Shorthand," p. 15.

[22]Anderson, *op. cit.*, p. 130.

[23]Leslie, *op. cit.*, *Methods of Teaching Gregg Shorthand*, p. 269.

[24]*Ibid.*, p. 77.

Condon disagrees by stating:

> Copying even rather long sustained takes [assignments] one or two times is not sufficient to produce the best results. Evidence suggests that there is a direct relationship between achievement and the amount of homework writing practice done. This would suggest that a greater emphasis should be placed on homework writing practice.[25]

Copying from Print. Concerning the copying of print into shorthand, Leslie says:

> Copying from print into shorthand is not only of little value, it is definitely harmful to the learner. . . . Anything that contributes to hesitation in writing should be avoided. No one factor in shorthand teaching contributes more to the development of a hesitating style of shorthand writing than copying from print into shorthand.[26]

Lamb questions this objection:

> Just why students should hesitate so much if they are using the transcript of shorthand plates for this practice is a mystery to many teachers, for they [the students] may refer to the shorthand plates when in doubt as rapidly as they refer to the transcript when copying shorthand. Moreover, the fact that a student hesitates in his first practice in constructing outlines does not mean that she will form the habit of hesitating in constructing words. She has acquired real fluency in spelling outlines — that is, breaking outlines down into their component characters by sight — and now she needs a little time to do this by sound, and one aid is the printed key that the student can read aloud to herself as she writes the shorthand outlines, turning to the shorthand plates for help when necessary and then checking her notes with the shorthand plates to detect significant differences.[27]

Shorthand Reading Rates. With regard to reading rates, Leslie and Zoubek write:

> The ability to read any given outline or group of outlines rapidly 'today' is not important. Undue emphasis on premature reading speed on connected matter defeats its own purpose and hampers the development of genuine reading speed. When the homework assignment consists of a relatively small amount of connected matter to be read over and over until it has been partially memorized, it is possible for the learner to read it glibly with no prompting. This is not a good symptom of shorthand learning.[28]

A somewhat different philosophy toward reading rates is expressed in the *Course Guide for Shorthand One* prepared by the Professional

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[25] Condon, *op. cit.*, "How Can Shorthand Be Introduced Most Effectively?" p. 15.

[26] Leslie, *op. cit.*, *Methods of Teaching Gregg Shorthand*, p. 7.

[27] Marion M. Lamb, *Your First Year of Teaching Shorthand and Transcription* (Cincinnati: South-Western Publishing Co., 1961), p. 52.

[28] Leslie and Zoubek, *op. cit.*, *Teacher's Handbook*, p. 59.

Standards and Advancement Committee of the Texas Business Education Association:

> During the first three weeks of shorthand instruction, teaching emphasis is placed on the development of reading skill. After writing is introduced, less class time is devoted to reading practice. However, students should be expected to increase their reading rates throughout the semester. . . . At least three reading rates should be recorded for each student during each of the six grading periods. Minimum speeds for reading rates for each grading period respectively are 80 words a minute, 90 words a minute, 120 words a minute, 130 words a minute, 150 words a minute, and 170 words a minute.[29]

Obviously, such a scale designed to measure the student's ability to read any given outline or group of outlines at a specified minimum rate of speed "today" does place importance upon his ability to read shorthand rapidly.

Lamb also advocates the timing of reading rates:

> Timed reading of shorthand plates and notes should be a daily activity in both elementary and advanced shorthand classes, for fluency in reading is essential to fluency in transcribing. Part of every homework assignment should be the rapid reading aloud of textbook plates and written notes so that they may be read in class the next day without hesitation. Students should be asked to read these prepared passages under timing in class frequently enough to ensure home practice.[30]

Reading of "Cold Notes." Another apparent area of disagreement in shorthand teaching methodology is the practice of having students read back "cold notes."

Leslie states:

> Cold notes are normally impossible in a connective vowel system such as Gregg Shorthand. . . . Ordinarily, notes that can be read today can be read tomorrow or can be read a thousand years from now. Perhaps it should be said conversely that notes that cannot be read next year cannot be read today.[31]

Some teachers have observed that shorthand students do experience difficulty in reading "cold notes." Students who can read or transcribe shorthand notes during the hour the dictation was given

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[29]Texas Education Agency, *Course Guide for Shorthand One* (Summer, 1964), p. 4. (The fact that reading rates did not increase by the same amount each grading period may reflect the philosophy that skill development does not take place at a constant rate. A recommendation for reading rates progressing in constant increments is presented in Chapter X of this monograph.)

[30]Lamb, *op. cit.*, p. 108.

[31]Louis A. Leslie, *Methods of Teaching Transcription* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1949), p. 160.

do not necessarily possess the ability to read or transcribe the same notes a few days later.

Other shorthand instructors have suggested that providing for an occasional opportunity in reading "cold notes" emphasizes to the students the importance of writing legible shorthand outlines. The more legible shorthand outlines, in turn, result in more easily read "warm notes."

Since shorthand teachers seldom require students to read or transcribe notes written even as much as one or two days earlier, many teachers may not fully realize what a problem this can be for the students. Some class time could profitably be spent in this activity.

Conclusion

There is certainly no reason to believe that Liles is not correct when he says that "more so-called 'accepted' principles of teaching methodology in the field of shorthand exist without any objective evidence based on sound research than in any other business subject."[32] It is indeed unfortunate that the research data upon which the shorthand authors base many of their conclusions are never published. Certainly many of the commonly accepted principles of teaching methodology which have been established by shorthand authors should be tested. After such tests have been conducted by either an individual or a publishing company, the research data should be made public. It is only through such dissemination of research data that one can effectively and objectively evaluate the conclusions which are drawn from the data.

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[32]Liles, *op. cit.*, p. 52.

Chapter V

A COMPARATIVE ANALYSIS OF THE RESULTS OBTAINED FROM TWO APPROACHES OF SHORTHAND INSTRUCTION

> Many now prevalent aspects of shorthand methodology have been taken for granted by beginning teachers simply because they have read about them in teacher's manuals or articles in professional literature. . . . Unfortunately, many of the 'accepted' methods propounded to the teaching profession are unilateral in origin and have no scientific basis.[1]
>
> The area of shorthand and transcription still remains an area in which all too often teaching procedures have been based on opinions rather than sound research. Because it has been said repeatedly that certain procedures would produce the best results, the classroom teacher has been inclined to accept these statements without question. . . . We need to test many of the teaching methods that have been acclaimed by both authors and publishers as being the 'one best method' of teaching shorthand.[2]

"Perhaps no period of time since shorthand was introduced into this country has seen more significant research reported than during the past ten years."[3]

Research findings of the past decade have raised many questions concerning shorthand teaching methodology, with eight areas generating the most controversy. From these areas of disagreement, the following questions have evolved:

1. Is no more than a 60 percent knowledge of the abbreviating devices of the shorthand system sufficient for vocational purposes? Is only a 70 percent knowledge of the brief forms really sufficient?

2. Are shorthand word-list tests detrimental to the progress of the shorthand student? Is there not a significant relationship between the student's competency in the application of shorthand theory and his achievement in shorthand dictation?

3. Should students not be allowed to write shorthand during the first four weeks of class? If the writing of shorthand were not post-

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[1]Parker Liles, "Issues in Teaching Shorthand," *The Balance Sheet*, XLV (October, 1963), p. 52.

[2]Ruth I. Anderson, "Shorthand and Transcription," *Research by the Classroom Business Teacher*, Eighteenth Yearbook of the Eastern Business Teachers Association and National Business Teachers Association (Somerville, New Jersey: E.B.T.A. and N.B.T.A., 1961), p. 125.

[3]Ruth I. Anderson, "Utilizing Shorthand Research in the Classroom," *National Business Education Quarterly*, XXXVI (March, 1968), p. 46.

poned for the first four weeks, would the student's application of shorthand theory be facilitated?

4. Should students be permitted to keep their shorthand texts open during all dictation for the entire first semester? Should no new-matter dictation be given until the beginning of the second semester? Would previewed, graded new-matter material earlier in the year not be beneficial for the students?

5. Is teacher observation of shorthand students more hindrance than help to the students? If the teacher possesses the rapport in the shorthand class which he should possess, would observation of the writing habits of the students render them emotionally unstable? Would such observation ever be beneficial?

6. Should students be asked to write the connected plate material for each lesson only once? Is there not a direct relationship between achievement and the amount of homework writing practice done? Is the copying from print into shorthand definitely harmful to the learner? Would writing from print into shorthand by means of self-dictation not discourage a "rote copying" of shorthand outlines?

7. Are reading rates really of little importance? Is fluency in reading not essential to fluency in writing?

8. Is there really no such thing as "cold notes" in shorthand? Can any shorthand outline transcribed correctly on the date of the original dictation be transcribed correctly on any future date?

The answers to these and similar questions should be sought by all shorthand teachers who are truly concerned with making their teaching more effective and with encouraging their students to attain higher standards in shorthand and transcription. This chapter presents a brief summary of research relating to shorthand teaching methodology which was designed to answer some of the foregoing questions.[1]

A comparative analysis was made of the results obtained through the use of two approaches in the teaching of shorthand. Basic differences in teaching methodology between *Approach A*, the control group, and *Approach B*, the experimental group, were as follows:

1. In the experimental classes, students were encouraged to write theoretically accurate shorthand outlines. In the control classes, emphasis was placed only upon the student's writing of shorthand outlines which could be correctly transcribed.
2. Weekly theory, or word-list, tests consisting of 25 words taken

[1]Joe M. Pullis, *Methods of Teaching Shorthand: A Research Analysis*, Project No. 8-G-016, Grant No. OEG-7-8-000016-0059-(010), U.S. Department of Health, Education, and Welfare (Dallas, Texas), 1969.

from the current week's vocabulary study were administered to the experimental classes beginning the sixth week of the fall quarter. No theory tests were given the control classes.

3. The writing of shorthand was introduced with the sixth assignment for the experimental classes and delayed until the nineteenth assignment for the control classes.
4. When practicing familiar dictation, students in the experimental classes were not allowed to follow the dictation in their texts after the second reading and were encouraged to disregard the text earlier if possible. Students in the control classes were allowed to keep their textbooks open at all times while taking familiar dictation.
5. Teachers in the experimental classes observed daily the shorthand writing habits of their students. At no time did the teachers of the control classes observe the writing of shorthand by their students.
6. By the fourth week of instruction, students in the experimental classes wrote their homework twice, once from the connected plate material and once from the English transcript. The control classes wrote their homework only once, and this writing was from the connected plate material.
7. In the experimental classes, at least one reading rate was recorded for each student every two weeks. Students in the control classes were never timed on speed of reading shorthand.
8. In the experimental classes, writing of graded new-matter dictation began during the fifth week of instruction. No new-matter dictation was given to the control classes until the completion of shorthand theory.

In order to make the desired comparisons between the control and the experimental groups, the following procedures for collecting and analyzing data were employed.

Two control classes and two experimental classes in first-year shorthand participated in the study. There were 40 students in the experimental group and 39 students in the control group. No student registering for the beginning shorthand course had received previous instruction in shorthand. When the students first registered for the course, no distinction was made on their schedules as to the particular class they would enter. To obtain a random distribution of the shorthand students into four classes, each student was assigned a number. A table of random numbers was then utilized for determining student placement into the control and the experimental classes. After students had been randomly assigned to each class, the determination of which classes were control classes and which classes were experimental classes was also made by random selection. The four

classes were instructed by two teachers, with each teacher instructing one control class and one experimental class.

Three weekly word-list tests of 200 words each were administered to both the experimental and the control groups during the last three weeks of the winter and spring quarters. Each test was prerecorded on tape in order to maintain a consistency of dictation for each class. After the test had been administered, the students were asked to transcribe their outlines. Both the shorthand outlines and the transcripts were graded. The number of shorthand outlines which the student accurately wrote constituted his shorthand accuracy score. The number of shorthand outlines which the student correctly transcribed constituted his shorthand transcription score.

A weekly series of four, unfamiliar, three-minute, non-previewed dictation tests was given to each class during the last four weeks of the winter and spring quarters. The dictation was prerecorded on tape at rates ranging from 60 to 120 words a minute. Students were asked to transcribe the highest speed "take" which they could transcribe with no more than 3 percent shorthand transcription error. The highest speed "take" at which a student could transcribe with 97 percent accuracy constituted his dictation rate.

At the end of the winter and spring quarters, the student's shorthand accuracy index, transcription index, and dictation rate were recorded. The Product-Moment Correlation Coefficient was used to determine the relationship existing in the control group and in the experimental group between: (a) shorthand accuracy and shorthand dictation; (b) shorthand accuracy and shorthand transcription; and (c) shorthand transcription and shorthand dictation.[5] Comparisons were also made in the areas of shorthand dictation achievement, shorthand accuracy, and shorthand transcription at the end of the winter and spring quarters.

Upon the completion of nine months of instruction, the following findings were obtained:

1. In the control classes, shorthand dictation rates ranged from 70 to 100 words a minute. Five students passed dictation tests at 70 words a minute; fourteen at 80 words a minute; five at 90 words a minute; and one at 100 words a minute. In the experimental classes, shorthand dictation rates ranged from 70 to 110 words a minute. One student passed a dictation test at 70 words

[5]Coefficients of correlation between IQ and shorthand accuracy, IQ and shorthand transcription, and IQ and dictation achievement were computed each quarter; however, in each case the correlation coefficient was not significant.

a minute; six at 80 words a minute; seven at 90 words a minute; seven at 100 words a minute; and one at 110 words a minute.

The median average dictation rate for the control group was 80 words a minute; for the experimental group, 90 words a minute. The mean average dictation rate for the control group was 80.8 words a minute; for the experimental group, 90.5 words a minute. The critical ratio between the two means was 3.76, which was significant at the .01 level. The experimental students were significantly superior in shorthand dictation achievement.

2. The accuracy index for the control group was 121; for the experimental group, 151. The critical ratio between the two indexes was 4.76, which was significant at the .01 level. The experimental students were significantly superior in ability to write accurate shorthand outlines.
3. The transcription index for the control group was 151; for the experimental group, 174. The critical ratio between the two indexes was 3.5, which was significant at the .01 level. The experimental students were significantly superior in transcription ability.

There were significant positive relationships between:

1. The ability of the student in the control group to write accurate shorthand outlines and his achievement in shorthand dictation ($r = .5815$) and the ability of the student in the experimental group to write accurate shorthand outlines and his achievement in shorthand dictation ($r = .6495$).
2. The ability of the student in the control group to write accurate shorthand outlines and his ability to transcribe the outlines ($r = .9402$) and the ability of the student in the experimental group to write accurate shorthand outlines and his ability to transcribe the outlines ($r = .8308$).
3. The ability of the student in the control group to transcribe isolated shorthand outlines and his achievement in shorthand dictation ($r = .6616$) and the ability of the student in the experimental group to transcribe isolated shorthand outlines and his achievement in shorthand dictation ($r = .7144$).

Although contrary to opinion expressed by some shorthand authors, success in shorthand, as measured by achievement in shorthand dictation, is significantly related to one's ability to construct accurate shorthand outlines. As the student's mastery of shorthand vocabulary increases, achievement in shorthand dictation is enhanced. While it is true that the end result of shorthand dictation is the correct transcription of shorthand outlines, competency or lack of competency in

the writing of accurate shorthand outlines has a significant influence upon whether the outlines will be correctly transcribed.

Memorization or verbalization of rules is certainly not suggested; however, teaching methods and procedures utilized by the classroom teacher should be designed to encourage as great a degree of mastery of the shorthand system as possible.

When one considers the high degree of relationship which exists between competency in shorthand accuracy and achievement in shorthand dictation, it is apparent that the premises upon which some shorthand authors have based their teaching procedures have not been well-founded.

Shorthand students need much more than a 70 percent knowledge of the brief forms or a 60 percent knowledge of the abbreviating devices of the shorthand system.

Word-list tests motivate students in their study of shorthand theory and indeed prove beneficial rather than detrimental.

Student achievement is enhanced by expanding the amount of homework writing practice required. The writing of shorthand homework only once is not sufficient for best results.

Facility in reading shorthand is essential to facility in writing shorthand. The use of timed reading rates fosters a more intense study of shorthand and discourages superficial preparations.

It is indeed unfortunate that teaching methodology in the area of shorthand and transcription has evolved through personal opinion and intuition rather than through controlled research and experimentation. The error is then compounded when this opinion is repeatedly propounded to the teaching profession without benefit of evaluation.

Certainly, many of the commonly accepted principles of teaching methodology which have been established should be critically evaluated. After such evaluations have been conducted, the research data should be made public. It is only through such dissemination of research data that one can effectively and objectively evaluate the conclusions which are drawn from the data. If this approach were utilized, improvements in shorthand systems and methods of teaching these systems would result.

PART THREE

Chapter VI

THE EFFECT OF VARYING THE DURATION OF SHORTHAND DICTATION UPON THE STUDENT'S ABILITY TO TRANSCRIBE

There is general agreement among shorthand teachers that two of the major factors affecting the student's achievement in dictation are the rate and the duration of the dictation. Most teachers employ dictation tests of the same duration and provide for individual differences by varying the rates at which the tests are dictated. While five-minute dictation tests have prevailed in the past, an increasing percentage of shorthand teachers are presently using three-minute tests, partially because of the time problem in the classroom and partially because studies have indicated that rarely does an employer dictate uninterruptedly for longer than three minutes.

Shorthand teachers know that students are able to take dictation at higher rates of speed for a short period of time. When comparing achievement on three-minute and five-minute dictation tests, however, the question arises as to the relationship of achievement in shorthand dictation between the two lengths of tests.

Statement of the Problem

This problem was an analysis of the effect of varying the duration of shorthand dictation from three to five minutes upon the student's ability to transcribe.

Background of the Study

Seventy-one students enrolled in second-semester college shorthand participated in the study. All but three of the students enrolled in the course were females. Forty-four of the students were majoring in business education, 15 were majoring in office administration, and 12 were majoring in fields other than business education or office administration. The age range of the students was from 17 to 24. Fifty-one of the students were freshmen, 14 were sophomores, five were juniors, and one was a senior. Upon entering the course, the students ranged in dictation ability from 60 words a minute to 80 words a minute as measured by three-minute dictation tests requiring a 97 percent degree of accuracy.

Six of the students had completed two years of shorthand in high school before entering the course; 13 had completed one year of high school shorthand, 31 had completed one year of high school shorthand

and one semester of college shorthand; and 21 had completed one semester of college shorthand. Students having previous instruction in shorthand were given placement tests upon entering the collegiate shorthand program to determine the course level of instruction at which they should enter.

It is noteworthy that of the 44 students who had completed one year of shorthand in high school before entering college, only 13 were able to meet the advanced-placement standards for the first-semester course in shorthand. It is also interesting that of the 71 second-semester shorthand students, 21 had never studied shorthand before entering college.

The minimum speed requirement necessary to enter the second-semester shorthand course was 60 words a minute on three-minute, unpreviewed, unfamiliar dictation with no more than 3 percent error. The minimum speed requirement for completing the second-semester shorthand course was 80 words a minute on five-minute, unpreviewed, unfamiliar dictation with no more than 3 percent error.

The 3 percent error allowance consisted of shorthand and non-shorthand errors and could have been any combination of the two types of errors. For the course requirements, two tests at a given speed were passed before credit was given for that particular speed.

The shorthand classes met daily for a period of 50 minutes. Supervised labs were provided in the afternoon, and students were encouraged to attend these labs, especially if their shorthand skill development was not progressing as it should.

Procedures for Collecting and Treating Data

Once a week during the last six weeks of the semester the shorthand students were given prerecorded three-minute dictation tests at rates ranging from 80 to 140 words a minute. The students were required to meet one additional lab session each week where prerecorded five-minute dictation tests were given at speeds ranging from 60 to 140 words a minute. On both the three- and five-minute dictation tests, the shorthand students were asked to transcribe the highest speed "take" they could with no more than 3 percent error. The highest speed "take" which a student could transcribe with 97 percent accuracy on the three- and five-minute tests constituted his dictation rate for that particular length of test.

The dictation material was graded in order that each take of the same length would have the same proportion and type of English and grammatical problems. Other than the regulation of syllabic

intensity, no attempt was made to equate the difficulty of the words in the dictation material from one take to another.

After the students had transcribed the tests, an error analysis was made to determine the types and distribution of errors committed.

Presentation and Analysis of Data

The range of dictation rates on the three-minute takes for the seventy-one students was from 80 words to 130 words a minute. Two students passed a three-minute dictation test at 130 words a minute; none at 120; 21 at 110; 24 at 100; 21 at 90; and three at 80. The average dictation rate (median and mean) for the three-minute test was 100 words a minute.

TABLE VI
DISTRIBUTION OF STUDENTS ON THREE-MINUTE DICTATION RATE LEVELS

Number of Students	Speed of Dictation
2	130
0	120
21	110
24	100
21	90
3	80
0	70

On the five-minute takes, the range was from 70 words a minute to 120 words a minute. One student passed a five-minute dictation test at 120 words a minute; three at 110; one at 100; 20 at 90; 39 at 80; and seven at 70. The median average dictation rate was 80 words a minute; the mean average was 84 words a minute.

TABLE VII
DISTRIBUTION OF STUDENTS ON FIVE-MINUTE DICTATION RATE LEVELS

Number of Students	Speed of Dictation
0	130
1	120
3	110
1	100
20	90
39	80
7	70

It is obvious that no student could have had a dictation rate of 84 words a minute; and to this extent, the mean average is a meaningless figure when presented in isolation. However, when one also considers the variability of the data, the mean average may be used to yield an estimation of the significance of the difference between the sample averages.

The difference in achievement on the three- and five-minute takes was significant at the .01 level, indicating that student achievement was appreciably affected by increasing the duration of the dictation from three to five minutes. The coefficient of correlation, however, between achievement on three- and five-minute dictation tests was .7129.

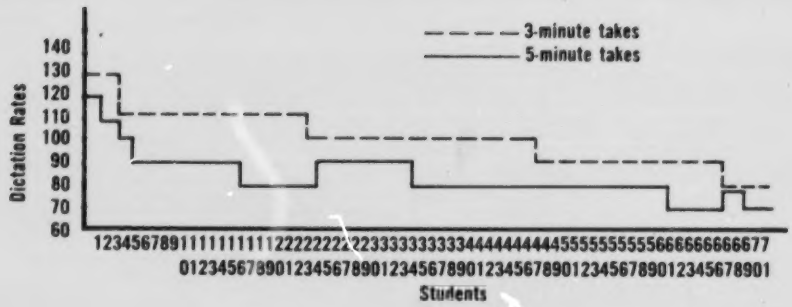

Fig. 4 — Shorthand Skill Levels on Three- and Five-Minute Takes for Seventy-One Students

No student in the study achieved his highest dictation rate on a five-minute test. Four students did as well on a five-minute test as they did on a three-minute test; 27 students had a difference of 10 words a minute between the two lengths of tests; 33 students had a difference of 20 words a minute; and seven students had a difference of 30 words a minute.

TABLE VIII

DISTRIBUTION OF DIFFERENCES IN WORDS A MINUTE BETWEEN THREE- AND FIVE-MINUTE TAKES

Difference in Words	Number of Students
0	4
10	27
20	33
30	7

The median average difference between the two lengths of dictation tests was 20 words a minute; the mean average difference was 16 words a minute.

On the best five-minute dictation test passed by each student, 45 percent of the errors were committed during the last two minutes of the test. Had there been an even distribution of errors, one would expect that 40 percent of the errors would have been committed during this interval.

On the five-minute dictation tests which were not passed, a considerably higher concentration of errors was committed during the last two minutes of the test. Whether the students' skills were not sufficient to maintain the dictation rate for the entire five minutes, whether the students were transcribing more accurately on the first part of the test by relying heavily on memory, or whether the students knew they had not passed the test and became discouraged during the transcription in the latter stages of the test could not be determined. A combination of these factors could very well have affected the in-

crease in the percentage of errors committed during the last two minutes of the five-minute tests which were not passed.

Of the total errors committed on the best three-minute take passed by each student, 82 percent of the errors were shorthand and 18 percent non-shorthand; on the best five-minute take, 76 percent of the errors were shorthand and 24 percent non-shorthand. Seventy-eight percent of the errors committed during the first three minutes of the five-minute take were shorthand and 22 percent non-shorthand.

TABLE IX

PERCENT OF SHORTHAND AND NON-SHORTHAND ERRORS ON THE THREE- AND FIVE-MINUTE TAKES

Type of Error	Dictation Intervals		
	Three-Minute Take	First Three Minutes of Five-Minute Take	Five-Minute Take
Shorthand	82%	78%	76%
Non-Shorthand	18%	22%	24%
Total	100%	100%	100%

Of the three- and five-minute takes which were not passed, the failure to pass the take appeared to rest primarily on the student's inability to read his shorthand notes and not his inability to handle correctly the mechanics of English usage.

Conclusion

A significant coefficient of correlation exists between achievement on three-minute dictation tests and achievement on five-minute dictation tests. For the most part, the students who achieve the highest dictation rates on three-minute tests also achieve the highest dictation rates on five-minute tests. The dictation rates achieved on the two lengths of tests, however, are not comparable. A significant difference does exist between the shorthand student's ability to take dictation for a three-minute duration and his ability to take dictation for a five-minute duration. It appears there may be a much greater difference in student achievement between three- and five-minute dictation tests than many shorthand instructors have suspected.

It is apparent that as an indicator of achievement, the speed of dictation at which a shorthand student is able to write may be a very unreliable measure unless other variables such as the duration of the dictation, the accuracy required in the transcription, the type of material used for testing, and the frequency at which the level of achievement can be attained are also known.

Chapter VII

THE EFFECT OF DEFERRED TRANSCRIPTION UPON STUDENT ACHIEVEMENT IN SHORTHAND DICTATION

The effect of deferred transcription upon students' achievement in shorthand dictation has rarely been studied. If shorthand outlines which can be read within the hour of the dictation can be read at any time, there would be no need in providing for deferred transcription activities. If, however, students do have difficulty in reading deferred transcription, or "cold notes,"[1] consideration should be given to the development of this skill.

Perhaps the claim to the effect that there are no such things as "cold notes" in Gregg shorthand has contributed to the lack of study in this area.

> In the true sense of the word, there are no such things as cold notes in Gregg shorthand.[2]
>
> Ordinarily, notes that can be read today can be read tomorrow or can be read a thousand years from now. Perhaps it should be said conversely that notes that cannot be read next year cannot be read today.[3]

While shorthand teachers agree that notes which cannot be read today cannot be read tomorrow, many question the validity of the statement that a student can transcribe tomorrow any notes he is capable of transcribing today.

Statement of the Problem

This problem was an analysis of the effect of deferred transcription upon students' achievement in shorthand dictation.

Purpose of the Study

The purpose of this study was to determine whether shorthand students could transcribe as accurately from shorthand notes written one week prior to their transcription as they could from notes written on the day of their transcription.

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[1]"Cold notes" refer to shorthand notes which were written at such a length of time prior to their transcription that the transcriber would not ordinarily be able to rely on his memory for transcribing the notes but rather would have to rely upon the legibility of the shorthand outlines. In this study, "cold notes" refer to shorthand notes which were written at least one week prior to their transcription.

[2]Louis A. Leslie, *Methods of Teaching Gregg Shorthand* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1953), p. 267.

[3]Louis A. Leslie, *Methods of Teaching Transcription* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1949), p. 160.

Procedures for Collecting and Treating Data

Two classes of forty-nine students enrolled in the first transcription course of advanced shorthand participated in the study. Upon entering the advanced course, all students were capable of taking dictation for a five-minute duration at a minimum rate of 90 words a minute on new, unpreviewed material with no more than 3 percent error.

During the fifteenth week of the semester, the students were given a prerecorded five-minute dictation test at 80 words a minute, a rate well within the control range of the class. The students were asked to transcribe the test, and both their transcriptions and shorthand notes were collected. One week later the shorthand notes were passed back to the students for the second transcription. A comparison was then made between the accuracy of the first and the second transcripts.

Presentation and Analysis of Data

Table X presents an analysis of the errors committed on the two transcripts.

TABLE X

AVERAGE NUMBER OF SHORTHAND AND NON-SHORTHAND TRANSCRIPTION ERRORS COMMITTED ON TWO TRANSCRIPTIONS OF IDENTICAL SHORTHAND NOTES

Dictation Interval	Shorthand Transcription Errors		Dictation Interval	Non-Shorthand Transcription Errors	
	First Transcription	Second Transcription		First Transcription	Second Transcription
First Minute	.95	1.25	First Minute	1.65	1.90
Second Minute	.75	1.15	Second Minute	.30	.15
Third Minute	1.05	1.75	Third Minute	1.25	1.55
Fourth Minute	1.25	2.25	Fourth Minute	.65	.80
Fifth Minute	1.00	1.40	Fifth Minute	.90	1.05
Total Errors	5.00	7.80	Total Errors	4.75	5.45

The average number of non-shorthand transcription errors — errors due to spelling, punctuation, grammar, etc. — increased from 4.75 errors on the first transcription to 5.45 on the second. This increase of .7 of an error was not statistically significant.

However, the average number of shorthand transcription errors increased from 5 on the first transcription to 7.8 on the second. The difference in shorthand transcription errors committed between the two transcripts was significant at the .05 level.

Total errors committed on the first and second transcriptions in-

creased from an average of 9.75 to 13.25, a 36 percent increase. This increase was significant at the .01 level. This difference would indicate that shorthand notes do become "cold" and cannot be read as accurately on later dates as they can on the date of the original dictation. Also, the average length of time required to complete the transcription of notes increased from 15 minutes 10 seconds on the first transcription to 18 minutes 15 seconds on the second transcription, a 20 percent increase. Evidently, transcription fluency is also affected by deferred transcription.

It should be noted that the students had an advantage in having first transcribed their notes on the date of the original dictation. The students had also been instructed before the dictation was given that they would have the opportunity to transcribe their notes again in one week. Notwithstanding, significantly more shorthand outlines were correctly transcribed immediately after the dictation than were transcribed from the same shorthand notes one week later. It would appear that memory is a greater aid and influence in transcription than some have proposed.

Conclusion

Apparently shorthand students do experience difficulty in reading "cold notes." Students who can read or transcribe shorthand notes during the hour the dictation was given do not necessarily possess the ability to read or transcribe the same notes a few days later with the same degree of ease and accuracy.

The shorthand instructor should not assume that stenographers or secretaries are never required to read or transcribe notes which have been written on earlier dates and that students will, therefore, have no need to possess the ability to read "cold notes." Such a need does exist, and consideration should be given to the development of this ability. Since many shorthand teachers have accepted the proposition that "cold notes" are nonexistent in Gregg shorthand, their students have not been provided with the opportunity of reading or transcribing notes which were written on prior dates. It would appear that for the benefit of these students, some class time could profitably be spent in this particular area of shorthand skill development.

PART FOUR

Chapter VIII

IMPLICATIONS OF RESEARCH FOR SHORTHAND PEDAGOGY

Instructors of shorthand are today indicating an increasing concern for empirical evidence to support the use of teaching procedures utilizing new methods and techniques of instruction. No doubt this concern is due in large part to the fact that a higher percentage of students fail shorthand than any other subject in our public secondary schools.[1] Such a concern appears to be justified when one also considers that at the completion of one year of shorthand instruction, fewer than 20 percent of the students are capable of taking dictation at 60 words per minute;[2] and at the completion of two years of instruction, fewer than 50 percent of the students are capable of taking dictation at 80 words per minute.[3] If it is assumed that the majority of the students enrolled in the shorthand course are capable of learning the skill, such shockingly low achievement levels must certainly be an indictment of the teaching procedures by which these students are instructed, for the proficiency attained by the students is directly related to the teaching methods utilized in the classroom.

"In the last ten years the nature of the research studies undertaken clearly reflects disenchantment with the methods which have been previously propounded, all too often by persons who were not classroom teachers and who therefore were relying far more heavily upon theoretical concepts than upon pragmatic experience."[4] As teachers, we should be constantly searching for more effective methods of instruction to use in our classrooms. A good teacher is never completely satisfied with all the methods he uses and tries. A conscientious teacher will be aware of the research being done in his specialized area and will analyze it to see what the implications are for his classroom.

Based upon current research findings in shorthand, Anderson rec-

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[1]William Selden, "Guidance for Business Education," *The Vocational Guidance Quarterly*, XII (Winter, 1963-1964), p. 108.

[2]Ruth I. Anderson, "Significant Implications of Research in Shorthand and Transcription," *Secretarial Education with a Future*, Nineteenth Yearbook of the Eastern Business Teachers Association and National Business Teachers Association (Somerville, New Jersey: E.B.T.A. and N.B.T.A., 1962), p. 52.

[3]Inez Frink, "A Comprehensive Analysis and Synthesis of Research Pertaining to Shorthand and Transcription" (Doctoral dissertation, Indiana University, 1962).

[4]Ruth I. Anderson, "Utilizing Shorthand Research in the Classroom," *National Business Education Quarterly*, XXXVI (March, 1968), p. 46.

ommends that teachers seriously consider incorporating the following practices in their shorthand teaching:

1. Use either the functional or the manual method of teaching, whichever will give the best results, making certain adjustments which need to be made as indicated below.
2. Emphasize theory throughout the shorthand program, but most especially during the first semester.
3. Give dictated timed word-list tests, grading not only the transcript but the shorthand outlines as well.
4. Continue the emphasis upon correct outlines in advanced shorthand since inaccurate outlines often cause errors in transcription.
5. Introduce new-matter dictation during the first semester at whatever point appears desirable, so long as a limited amount of time is devoted to such dictation in any one period.
6. Watch for those shorthand principles giving the class difficulty. Give special drills on the "o" and "oo" hooks and on the left and right "s."
7. Do not require the learning of shorthand rules. This is not what is meant by the term "theory" today.
8. If a dictation laboratory is available, experiment with various procedures to see which ones will yield the best results. Do not expect the equipment to do the teaching.
9. Try experimental techniques to determine reasonable transcription standards for shorthand students. Do not expect them to transcribe mailable copy for sustained periods at one-half to two-thirds their straight-copy typing rate.[5]

While Anderson's recommendations are based primarily upon research findings of the 1960's, the findings which were made often appear to be in disagreement with practices currently recommended by the Gregg shorthand authors.

Shorthand Theory

In a study of factors affecting achievement in shorthand, Haggblade found that the ability to write accurate shorthand outlines contributed more than any other factor toward the correct transcription of shorthand notes.[6]

Klaseus also found that the factor contributing the most toward the inability to transcribe shorthand outlines correctly was that of incorrectly written outlines. In comparing the accuracy of transcription between correctly written and incorrectly written shorthand outlines, Klaseus found that correctly written outlines were transcribed

[5]*Ibid.*, p. 54.

[6]Berle Haggblade, "Factors Affecting Achievement in Shorthand" (Doctoral dissertation, University of California, Los Angeles, 1965).

correctly 96 percent of the time as compared to incorrectly written ones, which were transcribed correctly only 59 percent of the time.[7]

A study by Fermenich indicated that a significant relationship exists between accuracy in application of principles and accuracy in transcription. There also appears to be a significant relationship between inaccuracy in application of principles and inaccuracy in transcription.[8]

When comparing the difference in the writing practices of 60 word-a-minute writers and 100 word-a-minute writers, the following results were found by Karaim: The 100 word-a-minute writers possess a greater degree of accuracy. They write more word outlines correctly and transcribe more words correctly. They possess a greater mastery of brief forms and phrases. They do not omit as many words when taking dictation.[9]

In studying the relationship between symbol mastery and selected dictation speeds in Gregg shorthand, Goetz also reported that those students who possessed the highest dictation speeds also attained the highest degree of symbol mastery.[10]

In his study of errors made in writing brief forms and in applying principles of shorthand, Patrick found a highly significant positive relationship between accuracy of outlines and accuracy of transcription for both brief forms and principles.[11]

After identifying and analyzing the numerous activities which make up the totality of the shorthand transcription process, Jester found that correctly written outlines have a direct bearing on the readability of the shorthand notes. A significant positive linear correlation of .79 was found to exist between the number of theory errors on a shorthand test and the number of problems occurring during transcription as the result of outlines which were incorrectly written.

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[7]Richard Klaseus, "An Analysis of Some of the Factors that Contribute to the Difficulty of Transcription Materials in Gregg Shorthand, Diamond Jubilee Series" (Master's thesis, Mankato State College, 1964).

[8]William Frederick Fermenich, "An Analysis of the Relationship Between the Application of Principles of Gregg Shorthand Simplified and Errors in Transcription" (Master's thesis, Mankato State College, 1959).

[9]William James Karaim, "A Comparison of the Writing Practices of Two Diverse Achievement Groups of Shorthand Students When Writing from Dictation" (Doctoral dissertation, University of North Dakota, 1968).

[10]Leo Goetz, "The Relationship Between Symbol Mastery and Selected Dictation Speeds in Gregg Shorthand" (Doctoral dissertation, University of North Dakota, 1966).

[11]Alfred Lloyd Patrick, "An Error Analysis of Selected Brief Forms and Principles in Shorthand Notes of Beginning Students" (Doctoral dissertation, University of Tennessee, 1965).

Transcribers with better skill in writing correct shorthand outlines were more efficient and faster transcribers because they lost less time deciphering incorrect outlines.[12]

In a comparison of the effect of the accuracy in transcription from outlines or context, Crewsdon found no conclusive evidence that context alone was a major factor in transcription. A correctly written outline was as important as context in preparing a mailable transcript. Crewdson concluded that students should be encouraged to write correct outlines instead of being urged "to get something down for every word" in the hope that they will be able to read it back correctly from the context. She recommended that more emphasis be placed on theory tests, especially early in the student's learning.[13]

Introduction of New-Matter Dictation

While research appears to be unanimous in its support of the need to develop high levels of proficiency in shorthand vocabulary, it is not in agreement with respect to when new-matter dictation should be presented.

In an experimental study with college students where the control class was not introduced to new-matter dictation until all shorthand theory had been completed and where the experimental class began new-matter dictation with the eighth class period, McKenna reached the following conclusions:

1. The early introduction of new-matter dictation does not result in an increase nor does it retard students in the ability to take and transcribe new-matter dictation.
2. The study provides no evidence to suggest either postponed benefits or postponed handicaps due to the early introduction of new-matter dictation.[14]

In a study at the high school level, Baird introduced new-matter dictation with Lesson 25 in the experimental class and postponed new-matter dictation in the control class until Lesson 54. He concluded:

1. The early introduction of unpracticed material in beginning high school shorthand classes did not reduce the time required to tran-

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[12]Don Jester, "A Time Study of the Shorthand Transcription Process" (Doctoral dissertation, Northwestern University, 1959).

[13]Norma N. Crewdson, "A Comparison of the Effect of Accuracy in Transcription from Outlines or Context" (Master's thesis, University of Minnesota, 1963).

[14]Margaret A. McKenna, "An Experiment to Determine the Effect of the Early Introduction of New-Matter Dictation in the Teaching of Beginning Shorthand to College Students" (Doctoral dissertation, Michigan State University, 1966).

scribe successfully unpracticed material dictated at 60 words per minute for three minutes.

2. The early introduction of unpracticed dictation material in beginning high school shorthand classes had no discernible effect on student achievement.[15]

Ward, however, in an investigation indicating the effect of early new-matter dictation on the achievement of first-year shorthand students, found a significant positive difference in the achievement of students taught with the early new-matter approach.[16]

Conclusion

In view of the research findings in shorthand reported in recent years, it is evident that many of the premises upon which the Gregg authors have based their teaching procedures have not been substantiated by research. "In the field of shorthand, there are factors which have caused teachers to be reluctant to adopt significant research findings in their teaching. Unlike other business subjects, in shorthand the recommendations for teaching methodology have emanated from only a few persons who have been very vocal in stressing the procedures shorthand teachers should adopt. This has resulted in a 'follow-the-leader' attitude among business teachers with little original thinking or critical review on their part of the procedures recommended."[17] Let us never be afraid to incorporate new methods in our classrooms based on the implications that are consistently evolving from research in shorthand pedagogy.

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[15]Jack Stanley Baird, "The Effectiveness of Introducing Regular Dictation of Unpracticed Material Before the Completion of Gregg Shorthand Theory" (Doctoral dissertation, Oregon State University, 1967).

[16]William C. Ward, Jr., "An Investigation Indicating the Effect of Early Use of New-Method Dictation on the Achievement of First-Year Shorthand Students" (Master's thesis, University of Utah, 1966).

[17]Anderson, "Utilizing Shorthand Research in the Classroom," *op. cit.*, p. 46.

ERROR ALLOWANCES IN SHORTHAND

Shorthand error allowance has, surprisingly, been the subject of little research or study. While all shorthand instructors recognize that the passing of a dictation test at 100 words a minute with 95 percent accuracy is in no way comparable to the passing of a dictation test at 100 words a minute with 98 percent accuracy, the "common denominator" for reporting dictation achievement has traditionally been based solely upon achievement in the speed of dictation. Thus, we hear that a student is capable of taking dictation at "x" words a minute without knowing what the accuracy requirement was, what the length of the dictation was, what type of material was used for testing, or whether the material was unfamiliar and unpreviewed.

A national survey[1] on evaluation procedures in shorthand revealed that there was little agreement among shorthand instructors as to accuracy requirements for shorthand students at comparable levels of instruction.

Accuracy requirements reported in the survey ranged from a 5 percent error allowance to a zero percent (perfect copy) allowance. Among instructors utilizing the same error allowance, there was some lack of agreement as to the allotment of these errors between shorthand and non-shorthand errors.

The most frequently reported error allowances were as follows:

1. *Five Percent Allowance.* Most shorthand instructors utilizing 5-minute dictation tests allowed 5 percent error, and the majority of the secondary school instructors using 3-minute tests also allowed 5 percent error.
2. *Three Percent Error Allowance.* The 3 percent error allowance was utilized primarily by those shorthand instructors who administered 3-minute rather than 5-minute dictation tests.
3. *Two Percent Error Allowance.* A small percentage of the shorthand teachers utilized a 2 percent error allowance, and almost one-third of the teachers requiring 98 percent accuracy would allow no more than 1 percent shorthand transcription error and 1 percent non-shorthand transcription error. That is, the 2 percent error allotment was equally

[1]Joe M. Pullis, "Evaluation Procedures in Shorthand and Transcription" (Independent Research, Louisiana Tech University, Ruston, Louisiana, 1971).

divided between shorthand and non-shorthand transcription errors. Of interest was the fact that one-fifth of the shorthand teachers requiring this higher degree of accuracy also administered the longer 5-minute tests.

4. *Perfect Copy Tests.* A very small number of shorthand instructors gave 3-minute dictation tests in which passing the test required the verbatim transcription of the material. No shorthand or non-shorthand transcription errors were permitted.

In view of such diverse accuracy requirements, it would certainly behoove all shorthand instructors to consider the appropriateness of various accuracy allowances. Before selecting an accuracy requirement, the advantages and disadvantages of each possible selection should be studied.

National Survey of Error Allowances

Five Percent Error Allowance. Advocates of the 5 percent error allowance feel that by permitting a higher percentage of errors the shorthand students will be able to progress more rapidly to higher dictation rates and that this exposure to higher rates of dictation is more advantageous than stymieing students at lower dictation rates by requiring high degrees of accuracy. Of important consideration, however, is where does one "draw the line" with respect to errors. That is, students would progress even faster to higher dictation rates if the error allowance were 10 percent, or 15 percent, or 20 percent. The question then becomes, while speed is important, what does represent a reasonable percent of error to allow students who are learning the shorthand skill.

Three Percent Error Allowance. Shorthand instructors recommending a 3 percent error allowance feel that this error rate combines the better features of the higher and lower accuracy rates. That is, they feel that the 3 percent error allowance permits the students to progress reasonably fast in speed development while maintaining a "respectable" degree of accuracy. The 3 percent allowance represents a "middle of the road" position between the high and low extremes of error tolerance.

Two Percent Error Allowance. Proponents of the 2 percent error allowance feel that while some error allowance should be permitted, this allowance should be minimal. As earlier noted, it is frequently found that those using a 2 percent error allowance divide this allowance equally (1 percent and 1 percent) between shorthand and non-shorthand transcription errors. In practice, such a distribution usually

means that the allowance is, in effect, less than 2 percent. For example, should a student transcribe a 3-minute, 100-word-a-minute take with 4 shorthand transcription errors, he would automatically fail the take since his shorthand transcription error rate exceeded 1 percent.

Zero Error Allowance. Protagonists of the "perfect copy" school of thought feel that the transcript of a dictation is of no value unless it is transcribed exactly as it was dictated. They feel that many of their shorthand students will be employed by employers who demand that dictation be transcribed verbatim, and that unless this ability is developed in the classroom, their students will not be successful on the job.

Conclusions

Ideally, the appropriate error allowance in shorthand would be that which promotes maximum speed development while fostering an acceptable degree of accuracy in transcription. And indeed, the accuracy required of stenographers and secretaries in their particular employment area should influence the degree of accuracy desirable for terminal shorthand students to possess. While the 100 percent accuracy requirement (perfect copy) places utmost importance upon perfection of transcription, it does have a highly inhibiting effect upon speed development. Although the popular myth that speed and accuracy develop simultaneously is still accepted by some, it is generally recognized that students should not be expected to experience higher dictation rates without accompanying increases in errors.

Certainly, if perfect copy tests are imposed early in the shorthand program, they have an extremely detrimental effect upon the students' skill development and tend to inhibit speed development at any level. It is appropriate to say that a teacher requiring 100 percent accuracy for passing a test should not require nearly as high dictation rates as would a teacher who accepted some error tolerance. Bearing this in mind, one might also ponder these questions: Could a student trained by the perfect-copy approach who was capable of taking dictation at 80 words a minute take dictation at 120 words a minute if suddenly allowed 3 percent error? Or, could another student capable of taking dictation at 120 words a minute with 3 percent error allowance transcribe with perfect accuracy if the dictation rate were lowered to 80 words a minute?

Research in learning theory would indicate that the student who has experienced higher speeds of writing with an error allowance can more easily transcribe slower rates at a high degree of accuracy than

can a student who has never experienced high speeds of writing increase his rates even if allowed more errors.

The discriminating power of perfect copy tests in distinguishing between levels of ability also leaves much to be desired in that a student who has only one error and a student who has fifteen errors would both "fail" the test. No doubt, the majority of the students are failures on any perfect copy test.

A survey[2] of 83 Administrative Management Society members in the Dallas-Fort Worth and Shreveport-Bossier City metropolitan areas revealed that none of these particular businessmen required verbatim transcripts of their dictation.[3] Interestingly, over half of the businessmen indicated that they expected their secretaries to "rewrite" or "rephrase" their dictation in more appropriate form while retaining the same meaning or intent of their dictation. This might well be one aspect of transcription which has not been considered in the classroom.

One businessman noted that since he did not possess a "photographic memory of his dictation," there would be no way he could check his correspondence for verbatim transcription. He also stated that should he ever require a verbatim transcription of dictation, he felt it would be advantageous to utilize a dictation-transcription unit. Whether this was an indictment of his secretary's ability to produce a verbatim transcript from shorthand copy or a feeling that a verbatim transcript could be more easily, accurately, and rapidly prepared from a dictation-transcription unit could not be determined.

While all the businessmen did indicate that they required "mailable copy," it is undeniable that what is mailable to one businessman may not be mailable to another. Two of the businessmen indicated that in order for correspondence to be considered mailable to them, no corrections (erasures) could be contained within the correspondence.

While the 2 percent error allowance does permit some margin of error, the equal distribution of the allowance between 1 percent shorthand transcription error and 1 percent non-shorthand transcription error does result in placing an especially high premium upon transcription accuracy. Such a distribution is obviously designed to avoid a concentration of errors in one category. Many shorthand teachers, however, who do not put limits on the category of errors do record the types of errors according to shorthand and non-shorthand transcription errors in order to assist them in providing more appropriate remedial exercises for their students.

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[2]Joe M. Pullis, "The Nature of Business Dictation and Transcription," Independent Research, Louisiana Tech University, Ruston, Louisiana, 1971).

[3]Only businessmen who indicated they normally dictated for at least 30 or more minutes daily were interviewed.

As previously indicated, the 3 percent error allowance represents a compromise between the liberal 5 percent allowance and the conservative 2 percent or zero percent allowances. A common practice among shorthand teachers utilizing a 3 percent error allowance on 3-minute takes is to allow the number of errors to equal 10 percent of the speed of the dictation. Thus, a 70 word-a-minute take could have a maximum of 7 errors, 100 words a minute, 10 errors, and 120 words a minute, 12 errors. Such a practice actually results in an error allowance of 3.33 percent.

The 5 percent error allowance represents the liberal extreme in error tolerance. Generally, the 5 percent error allowance is endorsed by those teachers utilizing 5-minute dictation tests. While the recommendation has been made that it would be beneficial to equate 3-minute dictation tests requiring 97 percent accuracy with 5-minute tests requiring 95 percent accuracy, such an equation is somewhat more difficult to develop than one might suspect. Shorthand students seem to develop a "sense" in recognizing a specific error limit for a specified dictation interval. Therefore, when shorthand students are asked to transcribe their highest dictation rate from a 3-minute, 3-percent-error-allowance take and from a 5-minute, 5-percent-error-allowance take, they appear unable to relate to these changes in accuracy and time variables. Since such a condition is certainly normal and should be expected, it may be best to equate the testing procedure through control and experimental classes. Assuming students and instruction to be comparable, utilizing 3-minute, 97-percent-accuracy tests with experimental classes and 5-minute, 95-percent-accuracy tests with control classes might be one procedure for comparing achievement.

A mistake often committed, however, in equating two types of tests is assuming that the difference occurring between the tests at one point in time remains constant at all times. Also, equating the tests should not imply that skill development is equally enhanced by both types of tests.

There may be a specific accuracy requirement which is most conducive to shorthand skill development, and it may be that this accuracy requirement should vary according to the particular level of shorthand instruction.

Certainly, the accuracy level maintained by the shorthand teacher has a profound effect upon the speed of dictation achieved by the shorthand students. It might very well be, however, that the most crucial consideration is the influence which varying accuracy requirements have upon the overall progress of the shorthand skill.

Chapter X

EVALUATION PROCEDURES IN SHORTHAND AND TRANSCRIPTION

Frederick G. Nichols' classical statement that "standards in business education are like the proverbial snakes of Ireland: there are none,"[1] aptly describes the dilemma in which many shorthand teachers find themselves. It might logically be anticipated that in a skill course such as shorthand few problems would arise in the evaluation of student progress; however, in actuality such is not the case.

A study of measurement and evaluation procedures in shorthand revealed that there was little agreement among shorthand instructors as to the performance standards their students should attain. Not only were there appreciable differences concerning minimum levels of achievement, but also the types of activities used for evaluating student progress varied widely. Evaluation activities ranged from basing the student's grade solely upon his dictation-recording ability to the inclusion of many activities in the measurement of student performance.

Research relating to shorthand pedagogy indicates that the ultimate performance attained by the shorthand student is significantly related to the measurement and evaluation activities utilized by the shorthand instructor. A most important question to consider, then, is what activities at given stages in the learning process are contributory to shorthand skill development and what level of performance in these activities may be reasonably expected from the students.

While any number of evaluation procedures might be utilized, the six most prevalent ones are reading rates, longhand transcription of shorthand plate material, vocabulary and brief form tests, familiar dictation tests, new-matter dictation tests, and production tests.

Reading Rates

Although the claim is made by some shorthand authors that the ability to read shorthand outlines rapidly is not important,[2] research does not support this opinion. Fluency in writing shorthand is fostered by fluency in reading shorthand, and the timing of reading rates provides a positive incentive in the study of shorthand.

Elementary shorthand students obviously engage in a great deal

[1]Frederick G. Nichols, "Criticism, Comment and Challenge: Standards Again," *The Journal of Business Education*, XXVII (February, 1952), p. 236.

[2]Louis A. Leslie and Charles E. Zoubek, *Teacher's Handbook for Gregg Shorthand* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1955), p. 65.

of oral spelling of shorthand outlines; however, by the fourth week of instruction, students should be able to read the current day's lesson with reasonable fluency. During the fourth week, students should be expected to read at a minimum of 40 words a minute, with an increase of 20 words for each respective grade level, when randomly called upon to read. This minimum rate might be increased by 10 words every two weeks until a base minimum of 160 words a minute is reached sometime during the second semester.

Longhand Transcription of Shorthand Plate Material

During the first twelve weeks of shorthand instruction, students might be asked to transcribe for three minutes from shorthand plate material or from the current day's shorthand homework notes. Students are evaluated on the number of correct words a minute they are capable of transcribing in longhand, with mistakes in spelling, punctuation, and capitalization counted as errors as well as omissions or incorrect transcriptions. By the fourth week, students should be able to transcribe a minimum of 12 correct words a minute with an increase in the minimum of one word each week through the twelfth week. An increase of 5 correct words might be required for each corresponding letter grade.

Vocabulary (Theory) Tests and Brief Form Tests

Protagonists of the philosophy that a correctly written outline is one which is correctly transcribed and that little attention need be paid to shorthand theory[3] have failed to recognize that it is shorthand accuracy which contributes most to the correct transcription of shorthand notes. While it is true that a correctly written outline may be transcribed incorrectly and that an incorrectly written outline may be correctly transcribed, research indicates that a correctly written outline is in actuality many times more likely to be correctly transcribed than is an incorrectly written outline. There is indeed a significant positive relationship between the student's ability to write accurate shorthand outlines and his achievement in dictation! Vocabulary tests should play a vital role in the measurement of student progress.

The recommendation that a shorthand student need possess no more than a 70 percent mastery of the brief forms[4] is not consistent with the fact that a higher percentage of brief forms are inaccurately transcribed when not correctly written than are any other words. No

[3] *Ibid.*, p. 65.

[4] Louis A. Leslie, *Methods of Teaching Gregg Shorthand* (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1953), p. 12.

doubt this is largely due to the fact that brief forms do not contain the component characters of the words they represent and are thereby more difficult to transcribe when not correctly written.

Brief form and vocabulary tests may profitably be administered by the second month of shorthand instruction. A weekly test of 25 words over the preview words from the previous five lessons may be graded in terms of both accuracy of outline construction and accuracy of transcription. While the *minimum* acceptable standard on the vocabulary test might require the writing of 70 percent of the outlines correctly, a *minimum* of 90 percent of the brief forms should be correctly written.

It is when shorthand students have a mastery of the shorthand vocabulary — and certainly this does not imply rote memorization or verbalization of rules — that high levels of achievement in dictation-transcription ability are attained.

Familiar Dictation Tests

The term "familiar dictation" represents a broad definition and does not, by itself, specifically delineate the type of dictation given. That is, the familiar dictation may have been previewed or unpreviewed; it may have been previously used as drill in class or only written as a homework writing assignment; it may have been selected from a small number of lessons which were identified for the students, or it may have been selected from any lesson previously studied; and it may have been dictated verbatim from the text, or some of the words may have been altered to avoid rote memorization of the material. The type of familiar dictation administered, then, will have a significant bearing upon the level of achievement attained.

Three-minute familiar dictation tests are usually administered between the sixth and eighteenth weeks of instruction. If the material is unpreviewed, has not been practiced in class but has been written for homework, and comes from an announced five-lesson range, all students should be capable of attaining the following *minimum* rates with 95 percent accuracy: Week 12, 50 words a minute; Week 15, 60 words a minute; and Week 18, 70 words a minute. As these minimum standards are based on a grade of *C*, the scale may be raised 10 words for a *B* and 20 words for an *A*.

New-Matter Dictation Tests

As with familiar dictation, there exists considerable discrepancy among shorthand teachers with respect to how new-matter dictation is defined. Normally, new-matter dictation, when used for testing

purposes, should have been unpreviewed and never previously administered to the class.

The achievement attained by the class will depend to a great extent upon the duration of the dictation and also the degree of accuracy demanded by the teacher. New-matter dictation tests are usualiy either 3 or 5 minutes in duration; however, accuracy requirements vary widely. The most common error allowances are 5 percent, 3 percent, 2 percent (often divided equally between shorthand and non-shorthand transcription errors), and perfect copy tests.

Some shorthand teachers will permit no more than half of the allotted errors to be shorthand transcription errors and half non-shorthand transcription errors. That is, if 10 errors were permitted on a test, no more than 5 errors could be shorthand transcription errors. Such a restriction usually means that the error allowance is, in effect, less than it would appear. Many instructors record errors according to category for guidance purposes but do not restrict the percentage of errors to any certain category.

New-matter dictation tests are usually administered beginning with the second semester of instruction. On unpreviewed, new-matter, 3-minute tests requiring 95 percent accuracy, the high school student should be expected to attain the following *minimum* standards: Week 24, 50 words a minute; Week 30, 60 words a minute; and Week 36, 70 words a minute.

Only the transcript is graded on the new-matter dictation tests, and it is customary to require a student to pass at least two tests at a given speed before he receives credit for passing that rate. As with familiar dictation, the minimum standard may be raised 10 words for each letter-grade level. That is, in order to receive an *A*, a student would be required to pass at least two tests at 70 words a minute during the fourth six weeks, 80 words a minute during the fifth six weeks, and 90 words a minute during the sixth six weeks.

Production Tests

Since fewer than 40 percent of the students enrolled in first-year shorthand in high school will study second-year shorthand,[5] consideration should be given during the latter stages of the course to production performance.

One occasionally hears that since production in the office is untimed, production measurement in the classroom should not be timed.

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[5] *Subject Offerings and Enrollments in Public Secondary Schools*, U.S. Department of Health, Education and Welfare, Office of Education (Washington: U.S. Government Printing Office, 1965), p. 68.

However, when this approach is utilized, students develop a lackadaisical attitude toward work organization and production performance.

The duration of production tests should be at least 30 minutes, with production performance based upon the amount of mailable material produced. Although mailable copy is somewhat difficult to define objectively, perhaps the simplest definition is that it is copy which a reasonably exacting employer would normally be willing to sign at any time.

When high standards of mailability are required, most high school students will be able to produce no more than two letters with carbons (approximately 300 words) within a 30-minute production period at the completion of the first year of shorthand.

Since students in first-year shorthand will have received only nine to twelve weeks of training in production of mailable copy, mailable letter production tests should be weighted as a relatively minor percentage of the student's overall grade.

Conclusion

While classroom standards (as such) have very little meaning to most businessmen, the businessman is quick to recognize that certain schools or certain teachers within schools "turn out good shorthand students." To a very large extent, the classroom standards and evaluation activities which a shorthand instructor utilizes will determine just how proficient her students will become. The effectiveness of any evaluation procedure, then, should be measured not only in terms of its validity, reliability, and objectivity but also with respect to the degree to which the evaluation activity itself promotes and encourages the type of study which is contributory to shorthand proficiency. It is for these reasons that considerable thought and study must be given to the various forms of evaluation procedures which may be utilized by the shorthand instructor throughout the instructional program.

SPEED DEVELOPMENT IN SHORTHAND

The most popular speed development drill procedures in shorthand have traditionally been the pyramid plan and the minute plan. Both plans are, when properly administered, very effective and represent educationally sound learning procedures.

The Pyramid Plan

The pyramid plan is designed to have students writing in "speed spurts" at a rate 40 words a minute beyond their 3- or 5-minute writing rate for one-half minute durations, with the objective being to raise the dictation recording speed by 20 words a minute on the combined series of one-half minute writings.

Assuming that the writing level of the class were 80 words a minute, the pyramid plan would be administered as follows:

Cycle I

Step 1 — Preview the unusual or difficult words on the chalkboard. (Preview words should be written rapidly yet easily on the chalkboard to stress fluency of writing. Words should not be placed on the chalkboard before the class begins.)

Step 2 — Dictate the entire take of 400 words at 80 words a minute, the current writing speed of the class. (This dictation interval is based upon the assumption that dictation takes of 5 minutes are being used for evaluation purposes. If 3-minute takes were utilized, the introductory dictation need be for only 3 minutes.)

Step 3 — Have a small portion of the dictation read back by two or three students. Postview the chalkboard words and preview additional words as needed.

Cycle II

Step 4 — Dictate four half-minute takes at 120 words a minute. Have part of the material read back. (Provide for a ten- to fifteen-second rest pause between half-minute dictations. Students might request additional preview of difficult words during this period. In drill, students should never write outlines without knowing the correct construction of the outline.)

Step 5 — Repeat Step 4 over the same material. (The first 240 words will now have been dictated once at 80 words a minute and twice at 120 words a minute.)

Step 6 — Redictate the four half-minute takes at 110 words a minute without pausing and have part of this dictation read back.

Cycle III

Step 7 — Repeat Steps 4 and 5, dictating two series of four one-half minute takes at 120 words a minute from the last half of the dictation material.

Step 8 — Redictate these four half-minute takes at 110 words a minute without pausing and have part of the take read back.

Cycle IV

Step 9 — Redictate the entire take at 100 words a minute without pausing. Have part of the material read aloud in class.

Step nine completes the pyramid plan with the students writing continuous dictation at an increased rate of 20 words a minute — the goal for which they were striving.

The Minute Plan

The minute plan of dictation, while somewhat simpler in design, is also highly effective. Assuming again that the writing level of the class were 80 words a minute, the minute plan would be administered in the following manner:

Cycle I

Step 1 — Preview approximately ten to twelve words from the first 100 words of dictation material. Dictate the material at 80 words a minute.

Step 2 — Provide for postview and additional preview as needed. Redictate the material at 90 words a minute.

Step 3 — Redictate the material at 110 words a minute.

Step 4 — Redictate the material at 100 words a minute. Have the dictation read back by individual students.

Cycle II

Repeat Steps 1-4 for the next 100 words.

Cycle III

Dictate the first 200 words at 100 words a minute. Read back part of the dictation.

Cycle IV

Repeat Steps 1-4 for the next 100 words.

Cycle V

Repeat Steps 1-4 for the next 100 words.

Cycle VI

Dictate the second 200 words at 100 words a minute.

Cycle VII

Dictate the entire take at 100 words a minute. Read back part of the dictation. (At the end of the activity, some dictation should be given at a control rate in order to refine the outlines and to maintain legibility of writing.)

As in the pyramid plan, the students have raised their dictation recording speed by 20 words a minute.

One particularly desirable feature of the minute plan is that it is highly flexible and is adaptable to many variations in the drill procedure which is especially useful in providing for change of pace. In fact, an infinite number of variations might be provided.

After students have completed the first six cycles of the minute plan, continuous dictation might be administered by dictating one minute at 110 words a minute followed immediately by two minutes at 100 and ending with two minutes at 90. Or the procedure might be reversed, dictating the first two minutes at 90, the third and fourth minutes at 100, and the final minute at 110. Another variation might be to dictate the first minute at 90, the second minute at 100, the third minute at 110, the fourth minute at 100, and the fifth minute at 90.

While such variations are helpful for an occasional change in routine, shorthand instructors would do well to have one basic plan for skill building which is the foundation of their speed development program. The importance of a systematic procedure cannot be overemphasized, for it is only through such drill that satisfactory levels of dictation achievement can be attained.

UTILIZING SHORTHAND THEORY AND SPEED DEVELOPMENT TAPES IN THE CLASSROOM

While the use of prerecorded instruction tapes will no doubt be viewed by many as the first truly practical means of individual pacing in shorthand, its application need not be limited to individualized drill. Indeed, its use has proven to be highly effective and of considerable value as an instructional aid in the self-contained classroom.

In a study[1] at Louisiana Tech University, theory and speed development tapes were utilized as part of the regular class period and were also made available for student use, either for review, remedial instruction, or individual drill in the shorthand lab. The shorthand class utilizing the tapes met daily with 75-minute periods for a total of 12 instructional weeks. Twenty-eight girls — all office administration majors of freshman and sophomore standing — constituted the enrollment in the class. None of the students had previously studied shorthand.

The cost of equipping the classroom for utilizing the tapes was minimal, in that all that was needed was a cassette tape recorder and an extension speaker to maximize the fidelity of the broadcast.

All students in the class proceeded at the same rate in terms of lesson presentations — one lesson a day — and were given the same dictation, as multi-channel dictation equipment was not utilized.

In order to minimize the teacher activities which could be as effectively handled mechanically, all dictation drills were prerecorded on tape. These drills, designed especially for the level and caliber of students enrolled in the course, consisted of familiar and graded new-matter dictation recorded especially for speed development training.

After the students had begun writing, the 75-minute class period was generally divided into four instructional modules:

1. Fifteen minutes of drill from the theory dictation tapes from the previous day's lesson;
2. Twenty minutes of familiar dictation drill from material contained in the shorthand text;
3. Twenty minutes of new theory presentation in tomorrow's lesson and reading practice from today's lesson; and,
4. Twenty minutes of unfamiliar dictation drill from heavily

[1]Joe M. Pullis, "Utilizing Magnetic Tapes in the Shorthand Class" (Independent Research, Louisiana Tech University, Ruston, Louisiana, 1972).

previewed and graded material. The graded material contained no theory which had not been introduced at least six lessons prior to its dictation. That is, if the students were currently studying Lesson 40, the graded dictation practice would contain no theory principles presented beyond Lesson 34.

Once dictation drill material had been properly prepared on tape, the administration of the drill was identical to the "live" presentation by the teacher. By use of the pause button on the recorder, the teacher was able to stop the dictation at the completion of each step for readback or for additional preview.

Since students enrolled in this experimental shorthand class were elementary students, a variation of the minute plan was utilized during the introductory stages of dictation. The dictation procedures followed closely the steps in the minute plan; however, the duration of the dictation intervals began with one-half minute progressions rather than with one-minute steps. Dictation was recorded for one-half minute at 60, 70, 80, and 70 words a minute. Both one-half minutes of dictation would then be combined at 70 words a minute for one minute of continuous dictation, etc. Perhaps this drill procedure could aptly be described as the half-minute plan.

By the completion of 12 weeks of instruction, the 27 students who completed the course had attained the following skill levels on familiar,[2] unpreviewed 3-minute dictation takes with at least 95 percent accuracy:

1. Five students passed takes at 80 words a minute;
2. Seven students passed takes at 70 words a minute; and,
3. Twelve students passed takes at 60 words a minute, with only three students being unable to transcribe a 60 word-a-minute take with 95 percent accuracy or better by the completion of three months of instruction.

The utilization of the theory dictation and speed development tapes in the classroom resulted in numerous benefits in complementing the traditional instructional procedures:

1. The theory presentation tapes enabled the students to reinforce their study of each day's new theory, both in class and also outside of class during laboratory periods and homework practice.

[2]Familiar dictation was defined as being dictation material from the student's text; however, none of the material utilized for testing had been used for dictation in class, and the students were not aware of which letters would be dictated. Approximately 10 percent of the words in the textual material was altered for testing purposes.

2. The provision of additional drill on new theory was of great benefit for those students whose learning rate required more exposure to each lesson.
3. The teacher was able to meet the needs of individual differences through the use of the tapes. It was not necessary for all students to receive the same "dose" in terms of drill activity. Those students who required more exposure to the drills were easily provided with this extra assistance through the prerecorded tapes.
4. The prerecorded drill presentation provided an auditory learning activity which would be closely related to an "in-class" teacher presentation, even though the students might be working at their own rate at home or in the dictation lab.
5. When a student was ill or had to miss a class or series of classes, the shorthand teacher had at his immediate disposal tapes which would rapidly assist the student in "catching up" with the class.
6. Remedial instruction was greatly simplified, as the instructor could "prescribe" the tapes consisting of the types of drill activity most needed by the students.
7. Through the use of the dictation tapes, the instructor had freed himself from an activity which could be as effectively handled mechanically. The pause button on the recorder enabled the instructor to provide as much preview, read-back, and board drill as he so desired and as the students needed.
8. The convenience of the cassettes enabled students to check out the tapes and receive as much dictation practice as they desired in their own rooms with a minimum amount of preparation of mechanical equipment.
9. The energy and voice of the teacher were spared from the repetitive dictation drills without sacrificing any of the benefits which are obviously derived from such drills.
10. As shorthand plates of the dictation drill material were provided for all tapes, students in a lab situation or in homework practice were never writing outlines they could not immediately check for accuracy if they were not sure of the construction.
11. As the tapes were always on when the students entered the room, there was never any "dead time" while the class settled down or while the instructor attended to the normal administrative responsibilities.
12. The shorthand class tended to be more homogeneous in nature, as the slower students were provided a means by which they could receive the extra instruction they needed.

13. Since the drill material was prerecorded, the dictation received by the shorthand students during the last period of the day was just as energetic and clear as that received by the first-period class.
14. The accuracy of speed on the taped dictation drills was much more precise, as any errors in timing could be corrected when the tapes were made.
15. On dictation takes, there was no danger of the students receiving "sympathetic dictation" since the pacing of the material could be accurately checked.
16. Through the use of the programmed tapes, varying homework assignments could be directed specifically to the individual needs of each student.
17. Teachers in classrooms equipped with multi-channel equipment could simultaneously administer different drills to the students, depending upon their individual needs.
18. The teacher was freed from the direct administration of routine drills and was thereby in a position to provide for more individualized assistance to each student.
19. Utilization of the series of different types of prerecorded shorthand drills helped maintain variety and "change of pace" in a somewhat unusually long (75 minutes) class period.
20. Most important, students enjoyed the tapes and quickly recognized the value of their application to their own individual skill development.

It is essential that all shorthand teachers recognize that the dictation laboratory should not be expected to do the teaching, but rather should be used as an aid in the teaching. Studies by Palmer,[3] Powell,[4] O'Connell,[5] and Hess[6] have indicated that no significant differences in achievement of groups taught with the use of taped dictation and groups taught with the traditional teacher dictation have occurred where dictation laboratories have been utilized. How-

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[3]Elise Douglas Palmer, "Development and Evaluation of Multiple-Channel Tape in Beginning Shorthand Classes" (Doctoral dissertation, University of Tennessee. 1963).

[4]Morton E. Powell, "A Study to Determine Speed of Dictation Using Multiple-Channel Tape Teaching Equipment" (Master's thesis, University of Wisconsin, 1964).

[5]Mary Margaret O'Connell, "An Experimental Study to Determine the Effectiveness of Programmed Gregg Shorthand Materials" (Doctoral dissertation, University of Wisconsin, 1968).

[6]Susie J. Hess, "The Comparative Performance of Students in Intermediate Collegiate Shorthand Taught by Contrasting Teaching Methods" (Doctoral dissertation, Indiana University, 1969).

ever, on the basis of an analysis of students' responses to a questionnaire designed to obtain the reactions of students toward the use of the shorthand laboratory as a vehicle for providing dictation experience, Hess found that students reacted favorably toward the shorthand laboratory when it was used only as a component of the total teaching method, but reacted negatively to the use of the laboratory as the sole means for providing instruction. Students also indicated a favorable response toward the use of the shorthand laboratory as a vehicle for providing dictation materials to be written as a part of the homework assignment.[7] It should be noted, however, that in one study it was reported that first-semester college students who did their writing in the traditional manner by self-dictation from their textbooks achieved a superior knowledge of the principles of the shorthand system than did those students who did their writing from recorded dictation with textbooks open for reference.[8]

While the most beneficial use of magnetic tapes in the classroom is the provision for routine drills, their effectiveness can be greatly increased by incorporating with the taped dictation supplementary previews, postviews, and read-backs. When such variety is provided, students react more favorably toward the tapes and appear to respond as though the dictation were being given directly by the instructor.

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[7] *Ibid.*

[8] Robert Nelton Hanson, "Visual Stimulus Versus Combined Audio-Visual Stimuli for Out-of-Class Practice in First-Semester College Gregg Shorthand" (Doctoral dissertation, University of North Dakota, 1966).

A NEW STANDARD WORD IN SHORTHAND?

Recommendations to change the standard shorthand word from 1.4 to 1.6 syllables have been made on the assumption that the dictated word of today's businessman is more likely to be 1.6 or more syllables in length rather than the 1.4 syllables currently used in the measurement of shorthand dictation material. The logic of the argument is that the unit used for measurement should closely approximate the unit it represents. The fallacy of the argument is that measurement, if it is to be reliable, must by definition be a constant rather than a variable standard. If it should somehow be discovered that the proverbial left foot of King Henry I had actually been equivalent to 13 inches in length rather than the proclaimed 12, no benefit would result in converting our yardstick to 39 inches. In this respect, the transformation of the standard shorthand word from 1.4 to 1.6 syllables is analogous to the conversion of a foot from 12 to 13 inches.

Should we change our unit of measurement, a high jumper who could jump 5 feet 5 inches yesterday could today jump only 5 feet after we had increased the foot to 13 inches. The jumping bar, however, would certainly be no closer to the ground than it was the previous day. Likewise, our shorthand student's dictation-recording speed would not change, even though it would appear to be slower. If shorthand speeds were measured on a continuum, our speeds would seemingly be reduced by approximately 12.5 percent.

The effect of a syllabic transformation from 1.4 syllables to 1.6 syllables could be obtained without recounting shorthand dictation material by increasing the speed of dictation by 14.29 percent or by reducing the time for dictating each interval by 12.5 percent. For example, in dictating material marked in groups of 20 standard shorthand words at the rate of 100 words a minute in "revised" shorthand words, one would dictate each group of words every 10.5 seconds rather than every 12 seconds. (See Table XI.)

The same procedure would be employed for dictating material which had been marked in quarter-minute intervals; however, the dictation time would, of course, remain constant. Regardless of the speed at which the dictation material was marked, each "quarter-minute interval" would be dictated every 13.125 seconds* to achieve the desired transformation. To dictate a 100 word-a-minute take

*Dictating each quarter-minute interval in exactly 14 seconds would result in converting the shorthand word to 1.5 syllables.

marked in quarter minutes of standard shorthand words at the rate of 100 words a minute in revised shorthand words, each quarter-minute interval would be dictated every 13.125 seconds. Thus, the old 100 words a minute is now 87.5 words a minute.

While these conversions may be utilized to change, in effect, the syllabic intensity of the shorthand word from 1.4 to 1.6 syllables, it should be recognized that no pedagogical advantages would result from such a transformation. After familiarity is developed with this "new word," students recognize that nothing mysterious is happening. The "new speeds" simply seem faster — and they are, by 14.29 percent. But the ability of the shorthand student has really not diminished; it has only been made to appear so.

TABLE XI

CONVERSION TABLE FOR DICTATING IN REVISED SHORTHAND WORDS FROM MATERIAL MARKED IN INTERVALS OF TWENTY STANDARD WORDS

Rate	Standard Shorthand Words	Revised Shorthand Words	Rate	Standard Shorthand Words	Revised Shorthand Words
40 wam	30.00 sec.	26.25 sec.	130 wam	9.23 sec.	8.08 sec.
50 wam	24.00 sec.	21.00 sec.	140 wam	8.57 sec.	7.50 sec.
60 wam	20.00 sec.	17.50 sec.	150 wam	8.00 sec.	7.00 sec.
70 wam	17.14 sec.	15.00 sec.	160 wam	7.50 sec.	6.56 sec.
80 wam	15.00 sec.	13.13 sec.	170 wam	7.06 sec.	6.18 sec.
90 wam	13.33 sec.	11.66 sec.	180 wam	6.67 sec.	5.84 sec.
100 wam	12.00 sec.	10.50 sec.	190 wam	6.32 sec.	5.53 sec.
110 wam	10.91 sec.	9.55 sec.	200 wam	6.00 sec.	5.25 sec.
120 wam	10.00 sec.	8.75 sec.	210 wam	5.71 sec.	5.00 sec.

"Grade and Index" Proposal

Rather than revising the standard shorthand word, a more beneficial and appropriate recommendation would be tc "grade and index" the dictation material in terms of difficulty and representativeness. Research[1] at Louisiana Tech University designed to measure the difficulty and composition of shorthand dictation material utilizes a four-factor index. The variables utilized in grading and indexing the material are syllabic intensity; percent of brief forms, brief-form derivatives, and brief-form compounds; percent of high-frequency words; and percent of common words.[2]

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[1]Joe M. Pullis, "Measuring Difficulty and Representativeness of Shorthand Dictation Material" (Independent Research, Louisiana Tech University, Ruston, Louisiana, 1970).

[2]The most objective dependent variable serving as a measure of difficulty of dictation material is the average number of shorthand transcription errors committed per minute by the students. Two additional independent variables which also obviously influence error rate but which are known and can be controlled by the shorthand instructor are the speed and duration of the dictation.

Syllabic intensity as used above refers not to the syllables in the standard shorthand word in which the material is marked for dictation and which would be 1.4, but rather to the actual average number of syllables per word in the dictated copy.[3] Research indicates that the average syllabic intensity of business communications is approximately 1.6 syllables.

The percent of brief forms includes the 129 brief forms, their derivatives, and compounds. The inclusion of the brief-form derivatives and compounds is based upon the fact that a higher percentage of brief forms and brief-form derivatives are transcribed incorrectly when not correctly written than are non-brief forms. No doubt this is largely due to the fact that an incorrectly written brief form does not yield as much of the sound of the word as does a non-brief form.[4] The brief forms and their derivatives represent approximately 44 percent of the words in business communications.

High-frequency words represent the 100 most frequently used words in business communications. High-frequency words represent approximately 53 percent of our business vocabulary.[5]

Common words represent the 500 most commonly used words in business communication. While the selection of the number of words which represent "the common words" is an arbitrary choice, research does indicate that the 500 most commonly used words represent approximately 72 percent of our business vocabulary. Increasing the number of words to 1500 to represent the common words only results in an increase representing about 86 percent of the business vocabulary. Thus, tripling the number of words would not result in a refinement of the measuring instrument.

It should be noted that there is a degree of "overlap in measurement" with the brief forms in that 54 of the 100 high-frequency words

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[3]Contrary to popular belief, syllabic intensity, when utilized exclusively as the independent variable, has proven to be a very unreliable predictor of difficulty.

[4]Based upon this finding, it would certainly appear beneficial to have students obtain complete mastery of the brief forms rather than the 70 percent to 90 percent retention recommended by the Gregg authors as being sufficient. It should also be noted here that difficulty of material appears to depend in part on the particular philosophy and pedagogy of the shorthand teacher. That is, in a class where brief forms are mastered, a high percentage of brief forms would be one indication that the material should be less difficult; whereas, in a class where emphasis is not placed upon mastery of brief forms, a high percentage of brief forms would indicate that, for these particular students, the material would be more difficult.

[5]In this study, Devern J. Perry's "Analytical Comparison of the Relative Word-Combination Frequencies of Business Correspondence with Phrase Frequencies of Selected Shorthand Books" (Doctoral dissertation, University of North Dakota, 1968) was the source utilized in determining word frequency.

are brief forms and 119 brief forms, derivatives, and compounds occur within the 500 common words. However, since brief forms do represent unique shorthand words, their measurement should be included within each category as well as measured separately. Likewise, the 500 common words also include the 100 high-frequency words.

It would appear, then, that the proverbial "average" business communication consists of 1.6 syllabic intensity, 44 percent brief forms and brief-form derivatives, 53 percent high-frequency words, and 72 percent common words.

All printed dictation material should be indexed on the basis of syllabic intensity, percent of brief forms and brief-form derivatives, percent of high-frequency words, and percent of common words.[6] Thus, dictation material conforming to the preceding specifications would be prefaced with the index shown at the right:

1.6 SI
44% BF
53% HFW
72% CW

While the proposal made here is not that all shorthand material conform to the preceding specifications (although it should if it is purported to be representative of "typical" business dictation), it is recommended that all shorthand material be headed with an index of these variables. The shorthand teacher would then have a more systematic approach in determining whether two or more takes are of comparable difficulty and content.[7] When selecting dictation material, shorthand teachers often intuitively respond that "this take seems very easy while this take at the same speed appears very difficult." While such suspicions often prove correct, the accuracy of the prediction is solely dependent upon the intuitive powers of the teacher and not upon a systematic analysis of the material.

Certainly measurement in shorthand should be designed to indicate a change in the student's skill and not merely represent a divergence in the difficulty of the dictation material.

Results of Grading and Indexing

If a student should pass a take at 80 words a minute with the following index (1.5 SI; 40% BF; 50% HFW; 60% CW) and later pass another take at 90 words a minute with this index (1.4 SI; 55% BF;

[6]With computer assistance, the provision of such an index represents a relatively simple undertaking. A distinctive and beneficial publishing company service would be the publication of a supplementary pamphlet indicating the index of all takes and letters in currently existing dictation and transcription texts.

[7]The index would also assist the teacher in selecting materials to meet specific objectives, such as easy material for speed building and brief-form material for brief-form drills.

65% HFW; 80% CW), the increase in dictation rate might very well represent nothing more than a decrease in the difficulty of the material rather than an increase in the student's dictation-recording ability.[8]

Both Hillestad[9] and Uthe[10] have made comprehensive studies of various factors which contribute to the difficulty of shorthand dictation materials. Hillestad developed a multiple regression formula based on a combination of variables that predicted the difficulty level of shorthand dictation materials using the Gregg Simplified shorthand system. In an evaluation of the difficulty level of Gregg Diamond Jubilee shorthand dictation materials, Uthe studied 35 variables in a sample of 100 especially prepared letters which were dictated at 80 words a minute to fourth-semester high school students. In her multivariate analysis, Uthe obtained an r of .76 utilizing three weighted variables: words beyond the first 1500 on the Silverthorn list, brief forms, and word endings. It is noteworthy that in Uthe's study there was no significant relationship between syllabic intensity and difficulty. Using syllabic intensity as the sole independent variable, there was an r of —.13 between syllabic intensity and word error scores.[11]

Revising the standard shorthand word, then, from 1.4 to 1.6 syllables would actually contribute nothing to increasing the validity or reliability of the dictation material. However, a distinct improvement would be the provision of a four-factor index which would preface all dictation copy. Such an index would serve as a basis for assisting the shorthand teacher in gauging the dictation material in terms of difficulty and representativeness.

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[8]While a multiple regression equation combining the independent variables may be utilized in formally predicting levels of difficulty of the dictation material, shorthand instructors would also benefit from a descriptive knowledge of the material as provided by the four-factor index.

[9]Mildred C. Hillestad, "Factors Which Contribute to the Difficulty of Shorthand Dictation Materials" (Doctoral dissertation, University of Minnesota, 1960).

[10]Elaine F. Uthe, "An Evaluation of the Difficulty Level of Shorthand Dictation Material" (Doctoral dissertation, University of Minnesota, 1966).

[11]*Ibid.*

REDUCING APPREHENSION TOWARD UNFAMILIAR DICTATION

The plea that the material used for dictation measurement seems more difficult than the practice material is recognizable to all shorthand teachers. Understandably, when the dictation takes have not been graded and an index of difficulty prepared, such pleas are often justified. Even when the material has been graded, the fact that the dictation is totally unfamiliar, unpreviewed, and recorded under some degree of pressure contributes to the feeling that this material is undeniably more difficult than the practice material.

An effective teaching procedure which helps convince students that the material used for measuring dictation rates is no more difficult than the material used in drill exercises is to use a speed measurement dictation take which has recently been dictated to the class for the current day's drill material. By use of the minute plan, pyramid plan, or some other systematic speed building program with its appropriate preview and postview of words, the dictation is administered just as if it were the usual form of practice material. However, since speed dictation material is marked in quarter minutes, a conversion chart must be utilized in order to dictate the material at the desired varying rates.

For example, to dictate an 80 word-a-minute take marked in quarter minutes at the rate of 90 words a minute, each "quarter minute interval" would be dictated every 13.33 seconds.

Once the dictation material that has appeared to be unusually difficult when originally administered is used for speed development practice, it becomes evident that the dictation used for measurement (if it has been graded) is really no more difficult than that used for drill. As a consequence, this recognition results in more confidence and less apprehension on the part of the students when they take future unpreviewed, unfamiliar shorthand dictation.

RATE DESIRED FOR DICTATION

	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
40	15.00	12.00	10.00	8.57	7.50	6.67	6.00	5.45	5.00	4.61	4.29	4.00	3.75	3.53	3.33	3.16	3.00
50	18.75	15.00	12.50	10.71	9.38	8.33	7.50	6.82	6.25	5.77	5.36	5.00	4.69	4.41	4.17	3.95	3.75
60	22.50	18.00	15.00	12.86	11.25	10.00	9.00	8.18	7.50	6.92	6.43	6.00	5.63	5.29	5.00	4.74	4.50
70	26.25	21.00	17.50	15.00	13.13	11.67	10.50	9.54	8.75	8.08	7.50	7.00	6.56	6.18	5.83	5.53	5.25
80	30.00	24.00	20.00	17.14	15.00	13.33	12.00	10.91	10.00	9.23	8.57	8.00	7.50	7.06	6.67	6.32	6.00
90	33.75	27.00	22.50	19.29	16.88	15.00	13.50	12.27	11.25	10.38	9.64	9.00	8.44	7.94	7.50	7.10	6.75
100	37.50	30.00	25.00	21.43	18.75	16.67	15.00	13.64	12.50	11.54	10.71	10.00	9.38	8.82	8.33	7.89	7.50
110	41.25	33.00	27.50	23.57	20.63	18.33	16.50	15.00	13.75	12.69	11.79	11.00	10.31	9.71	9.17	8.68	8.25
120	45.00	36.00	30.00	25.71	22.50	20.00	18.00	16.36	15.00	13.85	12.86	12.00	11.25	10.59	10.00	9.47	9.00
130	48.75	39.00	32.50	27.86	24.38	21.67	19.50	17.73	16.25	15.00	13.93	13.00	12.19	11.47	10.83	10.26	9.75
140	52.50	42.00	35.00	30.00	26.25	23.33	21.00	19.09	17.50	16.15	15.00	14.00	13.13	12.35	11.67	11.05	10.50
150	56.25	45.00	37.50	32.14	28.13	25.00	22.50	20.45	18.75	17.31	16.07	15.00	14.06	13.23	12.50	11.84	11.25
160	60.00	48.00	40.00	34.29	30.00	26.67	24.00	21.82	20.00	18.46	17.14	16.00	15.00	14.12	13.33	12.63	12.00
170	63.75	51.00	42.50	36.43	31.88	28.33	25.50	23.18	21.25	19.61	18.21	17.00	15.94	15.00	14.17	13.42	12.75
180	67.50	54.00	45.00	38.57	33.75	30.00	27.00	24.54	22.50	20.77	19.29	18.00	16.88	15.88	15.00	14.21	13.50
190	71.25	57.00	47.50	40.71	35.63	31.67	28.50	25.91	23.75	21.92	20.36	19.00	17.81	16.76	15.83	15.00	14.25
200	75.00	60.00	50.00	42.86	37.50	33.33	30.00	27.27	25.00	23.08	21.43	20.00	18.75	17.65	16.67	15.79	15.00

Fig. 5 — Transformation Table (Conversion Chart) for Dictating at Varying Rates from Material Marked in Quarter Minute Intervals at a Given Rate.

Chapter XV

CONSIDERATIONS IN TEACHING TRANSCRIPTION

As in other areas of shorthand instruction, there exists divergent opinions concerning certain aspects of transcription. These contrasting beliefs range from determining the most appropriate time for introducing transcription to deciding what the major objectives of the transcription course should be. In those instances where divergent opinions have been expressed in professional literature relative to specific aspects of transcription instruction, this chapter endeavors to present a position statement concerning the particular topic being considered. Hopefully, these position statements will serve as springboards for discussion by transcription instructors who are actively engaged in pursuing new ideas in shorthand teaching methodology.

1. *Begin formal transcription training no sooner than necessary for optimum results.* Although some writers have advocated that the introduction of transcription at the typewriter begin as early as the second week of elementary shorthand, such a practice is analogous to the experiment in which identical twins were taught roller skating — one, prematurely; the other, at the optimum age. Within a short time, the second twin was skating as well as the first. During first-year shorthand, typewritten transcription can profitably be delayed until the last nine to twelve weeks of instruction.

2. *In second-year shorthand (transcription), continue to build shorthand vocabulary.* Contrary to frequently expressed opinion, extensive vocabularies do not develop "automatically" from the reading and writing of shorthand but rather from teaching procedures specifically designed to build the student's shorthand vocabulary. Unless vocabulary drills are continually utilized, the student's ability to write accurate outlines will be established during the first six months of instruction and appreciable increases in accuracy will not occur during the remainder of the instructional program. It should be recognized that there is a significant relationship between the student's ability to write accurate shorthand outlines and his achievement in shorthand dictation.

3. *Shorthand speed development should not terminate with first-year shorthand but should play a vital role in the transcription course.* A portion of most class periods in the transcription course should be devoted specifically to speed development with the customary chalkboard preview and postview of shorthand outlines and the intensive,

progressive dictation drills designed to promote dictation speed. It is indeed unfortunate that some transcription teachers apparently feel that the transcription course is no place to build higher dictation rates and therefore budget little time for this activity.

4. *Continue to give unfamiliar, unpreviewed dictation takes throughout the transcription course.* The development of high dictation rates, per se, is not the sole objective of the transcription course; however, the ability of the student to write shorthand rapidly and fluently plays such a vital role in his dictation-transcription ability that achievement in this activity should be considered in student performance. Dictation takes of three minute's duration are of sufficient length to measure sustained writing ability; however, the shorthand instructor should expect higher rates to be achieved on three-minute takes than would be expected on five-minute takes. Recommended error allowances range from those who propose a 5 percent error allotment to those who advocate that no errors (perfect copy) be allowed in the transcription of the dictation. An error allowance of 3 percent provides a sufficient accuracy requirement for measuring dictation-recording speed while permitting the students to progress from one dictation rate to the next without being stymied at one speed. This is particularly true when shorthand instructors administer dictation tests which increase in speed with ten-word increments rather than twenty.

5. *Provide a timed production period for mailable letters which will be long enough to serve as a measure of production ability.* Usually, this timed production period should be at least 30 minutes with the students producing as many mailable letters as they are capable of transcribing. Do not permit students to transcribe at their leisure in the absence of timing, as such a practice fosters poor work habits and is not contributory to high levels of achievement in production performance.

6. *Evaluate letter production tests solely on the basis of mailability.* Do not attempt to establish categories of mailability such as "perfect" or "correctable" letters where bonus or partial credit is given. The letter, as submitted, is either mailable or unmailable. Even though "mailability" is a nebulous term and difficult to define precisely, do provide your students with a list of the different types of errors which, to you, would render a letter unmailable.

7. *When dictating letters for transcription production, do not vary the rate at which the letters are dictated.* Some writers have recommended, for example, that if six letters were dictated, to dictate two letters at 80, two letters at 70, and two letters at 60. To utilize this

approach confuses the objectives in measuring dictation achievement with the objectives in measuring transcription ability. A student might fail to transcribe some of the letters simply because the dictation speed was too fast rather than because his transcription ability was inadequate. Dictation for transcription should be at a constant rate within the control writing level of the students — approximately 20 words below their dictation achievement. The transcription objective is solely to measure how many mailable letters (or other material) the students are able to produce from notes written within their control writing rate.

8. *Do not overdo office-style dictation or the reading and transcribing from "cold notes."* The majority of the dictation in the transcription class should be timed dictation, with occasional office-style dictation presented toward the terminal stages of the course. Although some shorthand authors have stated that with their particular shorthand system there is no such thing as "cold notes," research does not support this opinion. However, even though shorthand notes do become "cold" and cannot be read as rapidly or as accurately on later dates as they can on the original date of the dictation, most of the transcription in the class should be from current dictation. The occasional transcription from notes written several days earlier does help emphasize, however, the importance of writing accurate, legible shorthand outlines.

The extent to which transcription is effectively taught will determine the extent to which students will become proficient in their terminal shorthand skill. While this chapter, by intent, has discussed areas of instruction in which there exists contrasting beliefs, it should not be forgotten that there are many areas in which transcription teachers are in harmonious agreement. It is incumbent upon all shorthand instructors to be ever mindful of utilizing teaching practices and procedures which will render their students in good stead when they make their entrance into the business world.

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